

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200374  
File 347:JAPIO Oct 1976-2003/Jul(Updated 031105)  
File 371:French Patents 1961-2002/BOPI 200209

Set	Items	Description
S1	31	AU='TOPOLKARAEV V':AU='TOPOLKARAEV V A'
S2	53	AU='SOERENS D' OR AU='SOERENS D A'
S3	18	S1 AND S2
S4	72	SHAPE()MEMORY AND HUMIDITY
<b>S5</b>	<b>1</b>	<b>S3 AND S4</b>
S6	97184	HUMIDITY OR SHAPE()MEMORY
S7	1	S1:S2 AND S4
S8	0	S7 NOT S5
<b>S9</b>	<b>7</b>	<b>(S1:S2 AND S6) NOT S5</b>

5/7/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015149969 \*\*Image available\*\*

WPI Acc No: 2003-210496/200320

**Humidity responsive material for diapers, comprise shape deformable matrix material(s), deforms in spatial dimension(s) when exposed to external forces, and exhibit change in spatial dimension(s) in humid environment**

Patent Assignee: SOERENS D A (SOER-I); TOPOLKARAEV V A (TOPO-I);

KIMBERLY-CLARK WORLDWIDE INC (KIMB )

Inventor: **SOERENS D A ; TOPOLKARAEV V A**

Number of Countries: 100 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200309876	A1	20030206	WO 2002US23330	A	20020723	200320 B
US 20030060564	A1	20030327	US 2001911986	A	20010724	200325
US 6592995	B2	20030715	US 2001911986	A	20010724	200348

Priority Applications (No Type Date): US 2001911986 A 20010724

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 200309876	A1	E	38	A61L-015/42	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ  
OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA  
ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB  
GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW

US 20030060564	A1		A61F-013/00
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US 6592995	B2		B32B-009/04
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Abstract (Basic): WO 200309876 A1

NOVELTY - **Humidity** responsive material, comprises shape deformable matrix material(s), deforms in spatial dimension(s) when exposed to external forces, and exhibit change in spatial dimension(s) in humid environment.

DETAILED DESCRIPTION - A **humidity** responsive material having **shape memory** comprises shape deformable matrix material(s). The **humidity** responsive material deforms in spatial dimension(s) when exposed to one or more external forces, maintains degree of deformation in spatial dimension(s) when the external force is removed, and exhibits a change, or percent recovery, in spatial dimension(s) when subjected to a humid environment.

USE - For producing laminated articles used for diapers, training pants, adult incontinent products, feminine care products such as sanitary napkins, tampons and vaginal inserts, and health care products such as wound dressings, delivery systems, surgical drapes, surgical gowns and other disposable garments.

ADVANTAGE - The use of **humidity** or moisture to activate the shape deformation material enables rapid molecular reorientation of the material having a latent, locked in amount of shape deformation without substantial increase in temperature of the material. The activation process minimizes the degree of heating of the material and results in no surface over heating of the shape deformation material, reduced material degradation and energy saving.

DESCRIPTION OF DRAWING(S) - The figure shows a top plan view of a composite material.

pp; 38 DwgNo 1/2

Derwent Class: A96; D22; F07; P34; P73

International Patent Class (Main): A61F-013/00; A61L-015/42; B32B-009/04

International Patent Class (Additional): A61F-015/00; A61L-015/22;

A61L-015/26; B32B-027/00; C08F-002/00; C08G-063/48; C08G-063/91

**9/26, TI/3 (Item 3 from file: 350)**

DIALOG(R) File 350:Derwent WPIX

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015369028

WPI Acc No: 2003-429966/200340

**Disposable article such as diapers, comprises humidity responsive material capable of deforming in spatial dimension when exposed to external force and maintains degree of deformation when external force is removed**

**9/26, TI/4 (Item 4 from file: 350)**

DIALOG(R) File 350:Derwent WPIX

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015123768

WPI Acc No: 2003-184291/200318

**Breathable, water weakenable film for disposable applications, comprises polymer blend containing poly(ethylene oxide) or modified poly(ethylene oxide) water-responsive polymer and thermoplastic synthetic resin**

**9/26, TI/5 (Item 5 from file: 350)**

DIALOG(R) File 350:Derwent WPIX

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015114921

WPI Acc No: 2003-175441/200317

**Polymer blend, for manufacturing breathable and environmentally stable water weakenable disposable films, fibers and articles, comprises water-responsive polymer of (modified) polyethylene oxide and thermoplastic resin**

**9/26, TI/6 (Item 6 from file: 350)**

DIALOG(R) File 350:Derwent WPIX

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014707452

WPI Acc No: 2002-528156/200256

**Shape memory material, can be deformed when exposed to external force, where a degree of deformation is maintained, and where material exhibits a change or percent recovery when subjected to electromagnetic**

**radiation activation energy**

**9/26, TI/7 (Item 7 from file: 350)**

DIALOG(R) File 350:Derwent WPIX  
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013303698  
WPI Acc No: 2000-475633/200041

**Adhesive composition useful as adhesive coating or layers in various personal care products increases in adhesive strength with exposure to temperature and relative humidity**

**9/7/1 (Item 1 from file: 350)**

DIALOG(R) File 350:Derwent WPIX  
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015418076  
WPI Acc No: 2003-480216/200345

**Preparation of humidity responsive material having locked-in shape deformation for disposable absorbent products, involves forming latent deformation in humidity responsive material which has specific properties**

Patent Assignee: SOERENS D A (SOER-I); TOPOLKARAEV V A (TOPO-I);  
KIMBERLY-CLARK WORLDWIDE INC (KIMB )

Inventor: **SOERENS D A ; TOPOLKARAEV V A**

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030060530	A1	20030327	US 2001911987	A	20010724	200345 B
US 6627673	B2	20030930	US 2001911987	A	20010724	200367

Priority Applications (No Type Date): US 2001911987 A 20010724

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030060530	A1		15	C08F-002/00	
US 6627673	B2			C08J-003/28	

US 20030060530 A1

US 6627673 B2

Abstract (Basic): US 20030060530 A1

**NOVELTY** - A latent deformation is formed in the **humidity** responsive material (HRM), and HRM having deformation is formed. HRM deforms in spatial dimension(s) when exposed to external force(s), maintains a degree of deformation in spatial dimension(s) once the external force is removed, and exhibits a change or percent recovery, in spatial dimension(s) when subjected to a humid environment.

**USE** - For preparation of **humidity** responsive material having amount of locked-in shape deformation (claimed) used in disposable absorbent products such as diapers, products having shrinkable, gatherable or expandable component, training pants, adult incontinence products, feminine care products such as sanitary napkin, tampons and vaginal inserts, and health care products such as wound dressing and delivery systems, and other products including surgical drapes, surgical gowns and other disposable garments.

**ADVANTAGE** - The shape deformation of a material is activated, without using an inefficient thermal heat activation process. The material retains the integrity at the time of use as disposable absorbent products, and has the ability to change desired shape and/or texture during use conditions. The disposable product transforms to a desired product configuration which guard against leakage, upon exposure to high **humidity** environment. The shape deformable material forms as films, fibers, filaments, strands, nonwoven and pre-molded elements, and used to form products, which are disposable and reusable.

pp; 15 DwgNo 0/2  
Derwent Class: A18; A28; A96; D22; F07  
International Patent Class (Main): C08F-002/00; C08J-003/28  
International Patent Class (Additional): C08F-008/00; C08G-063/48;  
C08G-063/91

**9/7/2 (Item 2 from file: 350)**

DIALOG(R) File 350:Derwent WPIX  
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015387262 \*\*Image available\*\*  
WPI Acc No: 2003-448207/200342

**Production of disposable article e.g. diapers, by incorporating humidity responsive material having locked-in-shape deformation and activating material by subjecting article to humid environment**

Patent Assignee: SOERENS D A (SOER-I); TOPOLKARAEV V A (TOPO-I)

Inventor: **SOERENS D A ; TOPOLKARAEV V A**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030060788	A1	20030327	US 2001911814	A	20010724	200342 B

Priority Applications (No Type Date): US 2001911814 A 20010724

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030060788	A1		15	A61F-013/15	

Abstract (Basic): US 20030060788 A1

NOVELTY - Production of a disposable article involves incorporating a **humidity** responsive material (HRM) having locked-in-shape deformation in the article and activating HRM by subjecting the article to a humid environment.

USE - As diapers, training pants, adult incontinence products, sanitary napkins, tampons, health care products, wound dressings, surgical drapes, or surgical gowns (claimed).

ADVANTAGE - The shaped memory in the disposable articles is activated when the products are exposed to high **humidity** or moist environments, without using an inefficient thermal heating activation process and without increasing temperature of the material. The materials retain their integrity during use, are easily disposed of, and have the ability to change to a desired shape. Upon exposure to a high **humidity** environment, the disposable product transforms to a desired product configuration, which will guard against leakage. The materials maximize the amount of locked in shape deformation within the material. A change in spatial dimension(s) of the material is caused without change in the temperature of the material. Recovery includes subjecting the material to a level of **humidity** or moisture to cause a desired change in spatial dimension(s) without a substantial change in the temperature of the material.

DESCRIPTION OF DRAWING(S) - The figure shows the top plan view of composite material.

shape deformable material (14,16)

pp; 15 DwgNo 1/2

Derwent Class: A18; A28; A96; D22; F07; P32  
International Patent Class (Main): A61F-013/15

File 348:EUROPEAN PATENTS 1978-2003/Nov W02  
File 349:PCT FULLTEXT 1979-2002/UB=20031113,UT=20031106

Set	Items	Description
S1	52	AU='TOPOLKARAEV':AU='TOPOLKARAEV VASILY ARAMOVICH'
S2	74	AU='SOERENS':AU='SOERENS DAVE ALLEN'
S3	28	S1 AND S2
S4	4693	SHAPE()MEMORY
S5	55360	HUMIDITY
S6	2	S3 AND S4 AND S5 [duplicates]
S7	39	S1:S2 AND S4:S5
S8	2	S1:S2 AND S4 AND S5
S9	0	S8 NOT S6
S10	37	S7 NOT S6

10/6/5 (Item 5 from file: 348)

00789820

A WATER-SHRINKABLE FILM

10/6/6 (Item 6 from file: 348)

00291599

Article with a reinforced area for fastening adhesive tape members and hot melt adhesive for making same.

10/6/7 (Item 1 from file: 349)

01027585 \*\*Image available\*\*

BANDAGE FOR ABSORBING EXUDATES COMPRISING POLY(ETHYLENEOXIDE)- AND CHITOSAN-BASED COMPOUNDS

10/6/8 (Item 2 from file: 349)

00976727 \*\*Image available\*\*

BLENDS OF POLYETHYLENE OXIDE WITH THERMOPLASTIC RESINS

10/6/9 (Item 3 from file: 349)

00976720 \*\*Image available\*\*

FILMS, FIBERS AND ARTICLES OF CHEMICALLY MODIFIED POLYETHYLENE OXIDE COMPOSITIONS WITH IMPROVED ENVIRONMENTAL STABILITY AND METHOD OF MAKING SAME

10/6/10 (Item 4 from file: 349)

00976296 \*\*Image available\*\*

PRE-MOISTENED WIPE PRODUCT

10/6/11 (Item 5 from file: 349)

00953405

BIODEGRADABLE FILMS HAVING ENHANCED DUCTILITY AND BREATHABILITY

10/6/12 (Item 6 from file: 349)

00952026 \*\*Image available\*\*

METHODS OF MAKING BIODEGRADABLE FILMS HAVING ENHANCED DUCTILITY AND BREATHABILITY

10/6/13 (Item 7 from file: 349)

00951636 \*\*Image available\*\*

BIODEGRADABLE FILMS HAVING ENHANCED DUCTILITY AND BREATHABILITY

10/6/14 (Item 8 from file: 349)

00920982

ABSORBENT, LUBRICIOUS COATING AND ARTICLES COATED THEREWITH

10/6/15 (Item 9 from file: 349)

00920869

WATER DEGRADABLE MICROLAYER POLYMER FILM AND SANITARY ARTICLES INCLUDING  
SAME

10/6/20 (Item 14 from file: 349)

00851636 \*\*Image available\*\*

TRIGGERABLE POLYMER COMPOSITION, AND ITEMS USING SAME

10/6/21 (Item 15 from file: 349)

00851635 \*\*Image available\*\*

SALT-SENSITIVE, WATER-DISPERSIBLE POLYMER COMPOSITION

10/6/22 (Item 16 from file: 349)

00851461

ION-SENSITIVE, WATER-DISPERSIBLE POLYMERS, A METHOD OF MAKING SAME AND  
ITEMS USING SAME

10/6/23 (Item 17 from file: 349)

00575845 \*\*Image available\*\*

POLY(ETHYLENE OXIDE) FILMS COMPRISING UNMODIFIED CLAY PARTICLES HAVING  
ENHANCED BREATHABILITY AND UNIQUE MICROSTRUCTURE

10/6/24 (Item 18 from file: 349)

00575838 \*\*Image available\*\*

POLY(ETHYLENE OXIDE) AND ORGANICALLY MODIFIED CLAY COMPOSITIONS HAVING  
REDUCED MELT VISCOSITY AND IMPROVED STABILITY TO AQUEOUS FLUIDS AND A  
ONE-STEP PROCESS FOR MAKING THE SAME

10/6/25 (Item 19 from file: 349)

00575375 \*\*Image available\*\*

HEAT-ACTIVATED ADHESIVES

10/6/26 (Item 20 from file: 349)

00562343 \*\*Image available\*\*

ABSORBENT ARTICLE WITH AN IMPROVED, WET-FORMED ABSORBENT CORE

10/6/27 (Item 21 from file: 349)

00535743 \*\*Image available\*\*

BREATHABLE FILM HAVING ORGANIC FILLER

10/6/28 (Item 22 from file: 349)

00502569

GRAFTED POLY(ETHYLENE OXIDE) COMPOSITIONS

10/6/29 (Item 23 from file: 349)

00502568

FLUSHABLE POLY(ETHYLENE OXIDE) FILMS WITH BALANCED MECHANICAL PROPERTIES

10/6/34 (Item 28 from file: 349)

00439053

TEMPERATURE SENSITIVE ADHESIVE COMPOSITION

10/6/35 (Item 29 from file: 349)  
00439017

**STABLE AND BREATHABLE FILMS OF IMPROVED TOUGHNESS AND METHOD OF MAKING THE SAME**

10/6/36 (Item 30 from file: 349)  
00383407

**TEMPERATURE-RESPONSIVE MATERIALS**

10/3,AB/2 (Item 2 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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01494306

**METHODS OF MAKING MATERIALS HAVING SHAPE - MEMORY  
PROCEDES DE PRODUCTION DE MATIERES A MEMOIRE DE FORME**

PATENT ASSIGNEE:

Kimberly-Clark Worldwide, Inc., (2258251), 401 North Lake Street, Neenah,  
WI 54956, (US), (Applicant designated States: all)

INVENTOR:

**TOPOLKARAEV**, Vasily, A., 1730 South Lee Street, Appleton, WI 54915, (US)  
**ODORZYNSKI**, Thomas, Walter, 255 Warren Court, Green Bay, WI 54301, (US)  
**SOERENS**, Dave, A., 191 Brook Lane, Roswell, GA 30075, (US)  
**GARVEY**, Michael, J., 309 N. Drew Street, Appleton, WI 54911, (US)  
**UITENBROEK**, Duane, Girard, 123 Homewood Court, Little Chute, WI 54140, (US)  
PATENT (CC, No, Kind, Date):

WO 2002047881 020620

APPLICATION (CC, No, Date): EP 2001987547 011213; WO 2001US50990 011213

PRIORITY (CC, No, Date): US 738549 001215

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;  
LU; MC; NL; PT; SE; TR

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: B29C-031/00

LANGUAGE (Publication,Procedural,Application): English; English; English

10/3,AB/3 (Item 3 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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01494249

**DISPOSIBLE PRODUCTS HAVING MATERIALS HAVING SHAPE - MEMORY  
PRODUITS JETABLES COMPRENANT DES MATERIAUX A MEMOIRE DE FORME**

PATENT ASSIGNEE:

KIMBERLY-CLARK WORLDWIDE, INC., (2258250), 401 North Lake Street, Neenah,  
Wisconsin 54956, (US), (Applicant designated States: all)

INVENTOR:

**TOPOLKARAEV**, Vasily, A., 1730 South Lee Street, Appleton, WI 54915, (US)  
**UITENBROEK**, Duane, Girard, 123 Homewood Court, Little Chute, WI 54140, (US)  
**SOERENS**, Dave, A., 191 Brook Lane, Roswell, GA 30075, (US)  
**ODORZYNSKI**, Thomas, Walter, 255 Warren Court, Green Bay, WI 54301, (US)  
**GARVEY**, Michael, J., 309 N. Drew Street, Appleton, WI 54911, (US)  
PATENT (CC, No, Kind, Date):

WO 2002047891 020620

APPLICATION (CC, No, Date): EP 2001987376 011213; WO 2001US48077 011213

PRIORITY (CC, No, Date): US 738397 001215

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;  
LU; MC; NL; PT; SE; TR

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: B29C-061/06  
LANGUAGE (Publication,Procedural,Application): English; English; English

**10/3,AB/4 (Item 4 from file: 348)**

DIALOG(R) File 348:EUROPEAN PATENTS

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01494248

**METHODS OF MAKING DISPOSABLE PRODUCTS HAVING MATERIALS HAVING SHAPE -  
MEMORY**

**VERFAHREN ZUR HERSTELLUNG VON WEGWERFPRODUKTEN MIT FORMGEDACHTNISMATERIAL  
PROCEDES DE FABRICATION D'ARTICLES JETABLES COMPRENANT DES MATIERES A  
MEMOIRE DE FORME**

PATENT ASSIGNEE:

Kimberly-Clark Worldwide, Inc., (2258251), 401 North Lake Street, Neenah,  
WI 54956, (US), (Applicant designated States: all)

INVENTOR:

**TOPOLKARAEV**, Vasily, A., 1730 South Lee Street, Appleton, WI 54915, (US)

**ODORZYNSKI**, Thomas, Walter, 255 Warren Court, Green Bay, WI 54301, (US)

**SOERENS**, Dave, A., 191 Brook Lane, Roswell, GA 30075, (US)

**GARVEY**, Michael, J., 309 N. Drew Street, Appleton, WI 54911, (US)

**UITENBROEK**, Duane, Girard, 123 Homewood Court, Little Chute, WI 54140, (US)

PATENT (CC, No, Kind, Date):

WO 2002047595 020620

APPLICATION (CC, No, Date): EP 2001987375 011213; WO 2001US48073 011213

PRIORITY (CC, No, Date): US 738552 001215

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;  
LU; MC; NL; PT; SE; TR

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: A61F-013/15

LANGUAGE (Publication,Procedural,Application): English; English; English

**10/3,AB/16 (Item 10 from file: 349)**

DIALOG(R) File 349:PCT FULLTEXT

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00914297

**MATERIALS HAVING SHAPE - MEMORY**

**MATERIAUX A MEMOIRE DE FORME**

Patent Applicant/Assignee:

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, US (Residence), US (Nationality)

Inventor(s):

**TOPOLKARAEV** Vasily A, 1730 South Lee Street, Appleton, WI 54915, US,

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**ODORZYNSKI** Thomas Walter, 255 Warren Court, Green Bay, WI 54301, US,

**GARVEY** Michael J, 309 N. Drew Street, Appleton, WI 54911, US,

**UITENBROEK** Duane Girard, 123 Homewood Court, Little Chute, WI 54140, US

Legal Representative:

PRATT John S (et al) (agent), Kilpatrick Stockton LLP, Suite 2800, 1100  
Peachtree Street, Atlanta, GA 30309, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200248253 A2-A3 20020620 (WO 0248253)

Application: WO 2001US48081 20011213 (PCT/WO US0148081)

Priority Application: US 2000739075 20001215

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU

SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 15007

English Abstract

The present invention relates to shape deformable materials, which are capable of (1) being deformed, (2) storing an amount of shape deformation, and (3) recovering at least a portion of the shape deformation when exposed to electromagnetic radiation (EMR) energy. The shape deformable materials can advantageously be in the form of films, fibers, filaments, strands, nonwovens, and pre-molded elements. The shape deformable materials of the present invention may be used to form products, which are both disposable and reusable. More specifically, the shape deformable materials of the present invention may be used to produce products such as disposable diapers, training pants, incontinence products, and feminine care products.

**10/3,AB/17 (Item 11 from file: 349)**

DIALOG(R) File 349:PCT FULLTEXT

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00914079

**DISPOSIBLE PRODUCTS HAVING MATERIALS HAVING SHAPE - MEMORY  
PRODUITS JETABLES COMPRENANT DES MATERIAUX A MEMOIRE DE FORME**

Patent Applicant/Assignee:

KIMBERLY-CLARK WORLDWIDE INC, 401 North Lake Street, Neenah, WI 54956, US  
, US (Residence), US (Nationality)

Inventor(s):

**TOPOLKARAEV** Vasily A, 1730 South Lee Street, Appleton, WI 54915, US,  
**UITENBROEK** Duane Girard, 123 Homewood Court, Little Chute, WI 54140, US,  
**SOERENS** Dave A, 191 Brook Lane, Roswell, GA 30075, US,  
**ODORZYNSKI** Thomas Walter, 255 Warren Court, Green Bay, WI 54301, US,  
**GARVEY** Michael J, 309 N. Drew Street, Appleton, WI 54911, US

Legal Representative:

**PRATT** John S (et al) (agent), Kilpatrick Stockton LLP, Suite 2800, 1100  
Peachtree Street, Atlanta, GA 30309, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200247891 A2-A3 20020620 (WO 0247891)

Application: WO 2001US48077 20011213 (PCT/WO US0148077)

Priority Application: US 2000738397 20001215

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU  
SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 14832

English Abstract

The present invention relates to shape deformable materials, which are

capable of (1) being deformed, (2) storing an amount of shape deformation, and (3) recovering at least a portion of the shape deformation when exposed to electromagnetic radiation (EMR) energy. The shape deformable materials can advantageously be in the form of films, fibers, filaments, strands, nonwovens, and pre-molded elements. The shape deformable materials of the present invention may be used to form products, which are both disposable and reusable. More specifically, the shape deformable materials of the present invention may be used to produce products such as disposable diapers, training pants, incontinence products, and feminine care products.

10/3,AB/18 (Item 12 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00914070

**METHODS OF MAKING MATERIALS HAVING SHAPE - MEMORY  
PROCEDES DE PRODUCTION DE MATIERES A MEMOIRE DE FORME**

Patent Applicant/Assignee:

KIMBERLY-CLARK WORLDWIDE INC, 401 North Lake Street, Neenah, WI 54956, US  
, US (Residence), US (Nationality)

Inventor(s):

**TOPOLKARAEV** Vasily A, 1730 South Lee Street, Appleton, WI 54915, US,  
**ODORZYNSKI** Thomas Walter, 255 Warren Court, Green Bay, WI 54301, US,  
**SOERENS** Dave A, 191 Brook Lane, Roswell, GA 30075, US,  
**GARVEY** Michael J, 309 N. Drew Street, Appleton, WI 54911, US,  
**UITENBROEK** Duane Girard, 123 Homewood Court, Little Chute, WI 54140, US

Legal Representative:

PRATT John S (et al) (agent), Kilpatrick Stockton LLP, Suite 2800; 1100  
Peachtree Street, Atlanta, GA 30309, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200247881 A2-A3 20020620 (WO 0247881)

Application: WO 2001US50990 20011213 (PCT/WO US0150990)

Priority Application: US 2000738549 20001215

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU

CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP

KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU

SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 14711

English Abstract

The present invention relates to shape deformable materials, which are capable of (1) being deformed, (2) storing an amount of shape deformation, and (3) recovering at least a portion of the shape deformation when exposed to electromagnetic radiation (EMR) energy. The shape deformable materials can advantageously be in the form of films, fibers, filaments, strands, nonwovens, and pre-molded elements. The shape deformable materials of the present invention may be used to form products, which are both disposable and reusable. More specifically, the shape deformable materials of the present invention may be used to produce products such as disposable diapers, training pants, incontinence products, and feminine care products.

10/3,AB/19 (Item 13 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT  
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00913918

**METHODS OF MAKING DISPOSABLE PRODUCTS HAVING MATERIALS HAVING SHAPE -  
MEMORY  
PROCEDES DE FABRICATION D'ARTICLES JETABLES COMPRENANT DES MATIERES A  
MEMOIRE DE FORME**

Patent Applicant/Assignee:

KIMBERLY-CLARK WORLDWIDE INC, 401 North Lake Street, Neenah, WI 54956, US  
, US (Residence), US (Nationality)

Inventor(s):

**TOPOLKARAEV** Vasily A, 1730 South Lee Street, Appleton, WI 54915, US,  
**ODORZYNSKI** Thomas Walter, 255 Warren Court, Green Bay, WI 54301, US,  
**SOERENS** Dave A, 191 Brook Lane, Roswell, GA 30075, US,  
**GARVEY** Michael J, 309 N. Drew Street, Appleton, WI 54911, US,  
**UITENBROEK** Duane Girard, 123 Homewood Court, Little Chute, WI 54140, US

Legal Representative:

**PRATT** John S (et al) (agent), Kilpatrick Stockton LLP, Suite 2800, 1100  
Peachtree Street, Atlanta, GA 30309, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200247595 A1 20020620 (WO 0247595)  
Application: WO 2001US48073 20011213 (PCT/WO US0148073)  
Priority Application: US 2000738552 20001215

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU  
SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 14640

English Abstract

The present invention relates to shape deformable materials, which are capable of (1) being deformed, (2) storing an amount of shape deformation, and (3) recovering at least a portion of the shape deformation when exposed to electromagnetic radiation (EMR) energy. The shape deformable materials can advantageously be in the form of films, fibers, filaments, strands, nonwovens, and pre-molded elements. The shape deformable materials of the present invention may be used to form products, which are both disposable and reusable. More specifically, the shape deformable materials of the present invention may be used to produce products such as disposable diapers, training pants, incontinence products, and feminine care products.

10/3,AB/30 (Item 24 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT  
(c) 2003 WIPO/Univentio. All rts. reserv.  
00502304

**WATER DEGRADABLE MICROLAYER POLYMER FILM  
FILM POLYMERE A MICROCOUCHES DEGRADABLE DANS L'EAU**

Patent Applicant/Assignee:

KIMBERLY-CLARK WORLDWIDE INC,  
Inventor(s):

**TOPOLKARAEV** Vasily,  
**SOERENS** Dave A,  
BRANHAM Kelly D

Patent and Priority Information (Country, Number, Date):

Patent: WO 9933656 A1 19990708  
Application: WO 98US27697 19981229 (PCT/WO US9827697)  
Priority Application: US 971730 19971231

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES  
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU  
LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA  
UG UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT  
BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA  
GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 17718

English Abstract

A microlayer polymer film comprising a plurality of coextruded microlayers including a non-degradable layer comprising a non-water degradable, melt-extrudable polymer and degradable layer comprising a water degradable, melt-extrudable polymer. The microlayer polymer film degrades when soaked in water and is suitable as a covering material for disposable items such as flushable diapers. The microlayer polymer film is also breathable and is a barrier to small amounts of water. A suitable non-water degradable, melt-extrudable polymer is linear low density polyethylene filled with a particulate filler. A suitable water degradable, melt-extrudable polymer is polyethylene oxide.

10/3,AB/31 (Item 25 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

(c) 2003 WIPO/Univentio. All rts. reserv.

00502303

**METHOD FOR MAKING WATER DEGRADABLE POLYMER MICROLAYER FILM**

**PROCEDE DE FABRICATION D'UN FILM A MICROCOUCHES DEGRADABLE DANS L'EAU**

Patent Applicant/Assignee:

KIMBERLY-CLARK WORLDWIDE INC,

Inventor(s):

**TOPOLKARAEV** Vasily,  
**SOERENS** Dave A,  
BRANHAM Kelly D

Patent and Priority Information (Country, Number, Date):

Patent: WO 9933655 A1 19990708  
Application: WO 98US27696 19981229 (PCT/WO US9827696)  
Priority Application: US 972059 19971231

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES  
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU  
LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA  
UG UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT  
BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA  
GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 16943

English Abstract

Method for making a breathable, water degradable microlayer polymer film comprising the step of coextruding a non-water degradable,

melt-extrudable polymer and a water degradable, melt-extrudable polymer to form a laminate comprising a plurality of non-degradable layers including the non-water degradable, melt-extrudable polymer and a plurality of degradable layers including the water degradable, melt-extrudable polymer. The method is conducted such that the laminate comprises a plurality of repeating laminate units in parallel stacking arrangement, each laminate unit comprises at least one of the non-degradable layers and at least one of the degradable layers, and the microlayer polymer film has a water vapor transmission rate of at least about 300g/m<sup>2</sup>/24hr./mil.

10/3,AB/32 (Item 26 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

(c) 2003 WIPO/Univentio. All rts. reserv.

00502299

**MICROLAYER BREATHABLE FILMS OF DEGRADABLE POLYMERS AND THERMOPLASTIC ELASTOMERS**

**FEUILLES PERMEABLES A MICROCOUCHES DE POLYMERES DEGRADABLES ET D'ELASTOMERES THERMOPLASTIQUES**

Patent Applicant/Assignee:

TOPOLKARAEV Vasily,  
SOERENS Dave A,  
THOMAS Oomman P,

Inventor(s):

TOPOLKARAEV Vasily,  
SOERENS Dave A,  
THOMAS Oomman P

Patent and Priority Information (Country, Number, Date):

Patent: WO 9933651 A1 19990708

Application: WO 98US27655 19981230 (PCT/WO US9827655)

Priority Application: US 972059 19971231; US 971730 19971231; US 98221084  
19981228

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES  
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU  
LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA  
UG UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT  
BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA  
GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 19010

English Abstract

A multi-microlayer thermoplastic film structure and methods of making the same. More specifically, this invention relates to a multi-microlayer film having a degradable polymer layer and a thermoplastic elastomer layer. Filler materials may be included in either the degradable polymer layer or the thermoplastic elastomer layer. The multi-microlayer films may be formed in a co-extrusion process.

10/3,AB/33 (Item 27 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

(c) 2003 WIPO/Univentio. All rts. reserv.

00482912

**MICROPOROUS FILM**

**FILM MICROPOREUX**

Patent Applicant/Assignee:

KIMBERLY-CLARK WORLDWIDE INC,

Inventor(s):

**TOPOLKARAEV** Vasily Aramovich,  
TSAI Fu-Jya

Patent and Priority Information (Country, Number, Date):

Patent: WO 9914264 A1 19990325  
Application: WO 98US19155 19980915 (PCT/WO US9819155)  
Priority Application: US 97931574 19970916

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES  
FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD  
MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ  
VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH  
CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW  
ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 13354

English Abstract

A microporous, hydrophilic polymer film has a morphology composed of distinctively interconnected pores, which are desirably surface-open. In particular aspects, the film can provide for a water vapor transmission rate (WVTR) value of at least about 1000 grams per square meter per 24 hours per mil (0.00254 cm) of film thickness. The film can exhibit a modulus of not less than about 1 MPa, and may also exhibit an elongation strain at break of at least about 100 % in both its machine and transverse directions. The film can also provide for a water contact angle of not more than about 80 degrees. In other aspects, the porous film can also include other properties or characteristics, such as a desired tensile strength at break, a desired elongation-at-break, and voids or pores having distinctive shapes, sizes, distributions and configurations.

**10/3,AB/37 (Item 31 from file: 349)**

DIALOG(R) File 349:PCT FULLTEXT  
(c) 2003 WIPO/Univentio. All rts. reserv.  
00338226

**A WATER-SHRINKABLE FILM  
FILM HYDRORETRECISABLE**

Patent Applicant/Assignee:

KIMBERLY-CLARK CORPORATION,

Inventor(s):

LARSON Jennifer Cappel,  
**SOERENS** Dave Allen

Patent and Priority Information (Country, Number, Date):

Patent: WO 9620738 A1 19960711  
Application: WO 95US16698 19951221 (PCT/WO US9516698)  
Priority Application: US 94367652 19941230

Designated States: AM AT AU BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU  
IS JP KE KG KP KR KZ LK LR LT LU LV MD MG MN MW MX NO NZ PL PT RO RU SD  
SE SG SI SK TJ TM TT UA UG UZ VN KE LS MW SD SZ UG AT BE CH DE DK ES FR  
GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 7726

English Abstract

Disclosed is a water-shrinkable film prepared from a composition comprising an elastomeric polymer and a water-dispersible polymer. Also disclosed is a disposable absorbent product, intended for the absorption of body fluids, including the film. The film is useful in imparting

improved water-shrinkability properties to the disposable absorbent product.

File 34:SciSearch(R) Cited Ref Sci 1990-2003/Nov W3  
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec  
File 67:World Textiles 1968-2003/Nov  
File 119:Textile Technol.Dig. 1978-2003/Jun  
File 240:PAPERCHEM 1967-2003/Nov W3  
File 248:PIRA 1975-2003/Nov W3  
File 323:RAPRA Rubber & Plastics 1972-2003/Nov

Set	Items	Description
S1	91	AU='TOPOLKARAEV V':AU='TOPOLKAREVA VA'
S2	34	AU='SOERENS D':AU='SOERENS D.A.' OR AU='SOERENS, D.':AU='S- OERENS, D. A.'
S3	38343	HUMIDITY
S4	6560	SHAPE()MEMORY
S5	2	S1:S2 AND S3 AND S4
S6	2	RD (unique items)
S7	197340	SHAPE
S8	137628	MOIST??? OR HUMID???
S9	0	(S1:S2 AND S7 AND S8) NOT S5

**6/6/1 (Item 1 from file: 67)**

00284244 WORLD TEXTILE NO: 2030793

**Methods of making humidity activated materials having shape - memory**

U.S. Patent and Trademark Office, -/WEEK 40, 2003

PUBLICATION DATE: September 30, 2003

**6/6/2 (Item 2 from file: 67)**

00282032 WORLD TEXTILE NO: 2028386

**Humidity activated materials having shape - memory**

U.S. Patent and Trademark Office, -/WEEK 29, 2003

PUBLICATION DATE: July 15, 2003

File 6:NTIS 1964-2003/Nov W4  
File 8:EI Compendex(R) 1970-2003/Nov W3  
File 34:SciSearch(R) Cited Ref Sci 1990-2003/Nov W4  
File 35:Dissertation Abs Online 1861-2003/Oct  
File 65:Inside Conferences 1993-2003/Nov W4  
File 67:World Textiles 1968-2003/Nov  
File 94:JICST-EPlus 1985-2003/Nov W4  
File 96:FLUIDEX 1972-2003/Nov  
File 99:Wilson Appl. Sci & Tech Abs 1983-2003/Oct  
File 119:Textile Technol.Dig. 1978-2003/Jun  
File 144:Pascal 1973-2003/Nov W3  
File 240:PAPERCHEM 1967-2003/Nov W4  
File 248:PIRA 1975-2003/Nov W4  
File 315:ChemEng & Biotec Abs 1970-2003/Oct  
File 323:RAPRA Rubber & Plastics 1972-2003/Nov  
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec  
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13  
File 111:TGG Natl.Newspaper Index(SM) 1979-2003/Nov 21

Set	Items	Description
S1	629813	SHAPE
S2	421401	MEMORY
S3	743181	DEFORM?
S4	3619223	CHANG?
S5	53988	S1()S2 OR S1(2N)S3:S4
S6	427350	HUMID? OR MOIST?
S7	75848	WATER() (VAPOR OR VAPOUR)
S8	9358	DAMP OR DAMPNES
S9	3278161	RESPON?
S10	1563860	ACTIVAT?
S11	109755	ACTUAT?
S12	494924	S6:S8
S13	348	S5 AND S12
S14	4630363	S9:S11
S15	987	S12()S14
S16	2	S5 AND S15
<b>S17</b>	<b>2</b>	<b>RD (unique items) [duplicates]</b>
S18	4	S12(3N)S14 AND S5
<b>S19</b>	<b>2</b>	<b>S18 NOT S16</b>
S20	59904	S1(3N)S2:S4
S21	45	S12(5W)S20
S22	29	RD (unique items)
S23	26	S22 NOT S18
<b>S24</b>	<b>26</b>	<b>Sort S23/ALL/PY,A</b>

19/7,K/1 (Item 1 from file: 8)

DIALOG(R) File 8:EI Compendex(R)

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06194340 E.I. No: EIP02457194601

**Title: Characterization of the electromechanical properties of Ionomeric Polymer-Metal Composite (IPMC)**

Author: Bar-Cohen, Yoseph; Bao, Xiaoqi; Sherrit, Stewart; Lih, Shyh-Shiuh  
Corporate Source: Jet Propulsion Laboratory/Caltech MS 82-105, Pasadena, CA 91109-8099, United States

Conference Title: Smart Structures and Materials 2002: Electroactive Polymer Actuators and Devices (EAPAD)

Conference Location: San Diego, CA, United States Conference Date:

20020318-20020321

Sponsor: SPIE

E.I. Conference No.: 60183

Source: Proceedings of SPIE - The International Society for Optical Engineering v 4695 2002. p 286-293

Publication Year: 2002

CODEN: PSISDG ISSN: 0277-786X

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical); X; (Experimental)

Journal Announcement: 0211W3

Abstract: IPMC is an electroactive polymer (EAP) that has been the subject of research and development since 1992. The advantages of IPMC in requiring low activation voltage and the induced large bending strain led to its consideration for various potential applications. However, before the benefits of IPMC can be effectively exploited for practical use, the electromechanical behavior of this group of EAP materials must be properly understood and quantified. An experimental setup was developed for data acquisition from IPMC strips that are subjected to various tip mass load levels. This data acquisition setup was used to measure the displacement and curvature of IPMC as a function of the input signal. Sample strips were immersed in water to minimize the effect of moisture content. In order to avoid electrolysis, the samples were subjected to 1-V square wave with either positive or negative polarity. Experiments have shown that IPMC has history dependence and the characteristics response is dominated by the backbone (e.g., Nafion, Flemion, etc.) and ionic content (e.g., Na<sup>+</sup>, Li<sup>+</sup>, etc.). 9 Refs.

Descriptors: Intelligent materials; Ionomers; Composite materials; Electrolysis; **Moisture**; Current voltage characteristics; **Actuators**; **Shape memory effect**

24/6/1 (Item 1 from file: 240)

00001961 PAPERCHEM NO: AB3801961

**POSSIBILITIES FOR REDUCING THE SWELLING OF PARTICLE BOARD**

PUBLICATION YEAR: 1967

24/6/2 (Item 2 from file: 248)

00065904 Pira Acc. Num.: 2372395 Pira Abstract Numbers: 13-78-02395

**Title: CORRUGATED PAPER TUBE PRODUCTION SYSTEM - HAS MOIST GLUED COILED PAPER TUBES DEFORMED TO APPROPRIATE SHAPE ON MANDREL AND THEN DRIED**

Publication Year: 1978

24/6/15 (Item 15 from file: 144)

14917410 PASCAL No.: 01-0067354

**Temperature sensitive water vapour permeability and shape memory effect of polyurethane with crystalline reversible phase and hydrophilic segments**

2000

24/6/16 (Item 16 from file: 144)

14857060 PASCAL No.: 01-0002747

**Water vapor permeability of Shape memory polyurethane with amorphous reversible phase**

2000

24/6/19 (Item 19 from file: 34)

09344209 Genuine Article#: 393YM Number of References: 43

**Title: Collisional-broadened and dicke-narrowed lineshapes of (H2O)-O-16  
and (H2O)-O-18 transitions at 1.39 mu m (ABSTRACT AVAILABLE)**  
Publication date: 20010100

**24/6/23 (Item 23 from file: 119)**  
0662060 200302909  
**Development of Amphibious Operations Suits.**

**24/7,K/6 (Item 6 from file: 323)**  
DIALOG(R) File 323:RAPRA Rubber & Plastics  
(c) 2003 RAPRA Technology Ltd. All rts. reserv.  
00502786  
**TITLE: HIGH MOISTURE PERMEABILITY POLYURETHANE FOR TEXTILE APPLICATIONS**  
AUTHOR(S): Hayashi S; Ishikawa N; Giordano C  
CORPORATE SOURCE: Mitsubishi Heavy Industry Co.Ltd.; Mitsubishi Heavy  
Industries America Inc.  
CONFERENCE PROCEEDINGS: Polyurethanes World Congress 1993. Conference  
Proceedings  
CORPORATE EDITOR: SPI, Polyurethane Div.; SPI Canada Inc.; European  
Isocyanate Producers Assn.  
SOURCE: Vancouver, B.C., 10th-13th Oct.1993, p.400-4. 43C6  
JOURNAL ANNOUNCEMENT: 199404 RAPRA UPDATE: 199405  
DOCUMENT TYPE: Conference Papers  
LANGUAGE: English  
SUBFILE: (R) RAPRA

ABSTRACT: A PU for waterproof sportswear was prepared from MDI,  
polyethylene glycol/polytetramethylene oxide glycol mixture and  
ethylene glycol. It was designed to have a Tg at room temp. so that it  
had high permeability above Tg and low permeability below Tg. There was  
a linear relationship between the concentration of ethylene oxide and  
the permeability. Some mechanical property data are shown for this  
**Shaped Memory Polymer.** 7 refs.  
DESCRIPTORS: COATED FABRIC; COMPANY; DATA; ELASTOMER; GLASS TRANSITION  
TEMPERATURE; GRAPH; **MOISTURE PERMEABILITY**; POLYURETHANE; PU; RUBBER;  
**SHAPE - MEMORY**; SPORTSWEAR; TABLES; TECHNICAL; TEXTILE APPLICATION; TG  
; THERMOPLASTIC; THERMOPLASTIC ELASTOMER; WATER PERMEABILITY;  
WATERPROOF

**24/7,K/8 (Item 8 from file: 94)**  
DIALOG(R) File 94:JICST-EPlus  
(c)2003 Japan Science and Tech Corp(JST). All rts. reserv.  
02349830 JICST ACCESSION NUMBER: 95A0246860 FILE SEGMENT: JICST-E  
**Special issue : Functional fibers expanding various applications. Moisture  
permeable material "Azekura" applying the characteristics of shape  
memory polymer.**  
YAMAGUCHI MUNEHIDE (1)  
(1) Komatsu Seiren Co., Ltd.  
Kogyo Zairyo(Engineering Materials), 1995, VOL.43,NO.3, PAGE.94-97, FIG.6,  
TBL.1  
JOURNAL NUMBER: F0172AAZ ISSN NO: 0452-2834 CODEN: KZAIA  
UNIVERSAL DECIMAL CLASSIFICATION: 677.1/.5  
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan  
DOCUMENT TYPE: Journal  
ARTICLE TYPE: Commentary  
MEDIA TYPE: Printed Publication  
ABSTRACT: This paper introduces "Azekura" which is warm by lowering

moisture permeation in low temperature and low humidity environment, and cool avoiding stuffy in high temperature and high humidity environment, and suitable sport wears, etc. This is the material in which **shape memory** polymer is coated or laminated in 5-50.µm of film thickness on reverse side of nylon and polyester cloths. It explains **moisture** permeation mechanism of polyurethane-based **shape memory** polymer used for Azekura and features of Azekura.

**24/7,K/14 (Item 14 from file: 67)**

DIALOG(R) File 67:World Textiles

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00239129 WORLD TEXTILE NO: 1982984 SUBFILE: EMDOCS

**Potential uses of shape memory film in clothing**

Technical Textiles International, 8/8 (17-19), 1999

COUNTRY OF PUBLICATION: United Kingdom

DOCUMENT TYPE: Journal; Article

RECORD TYPE: ABSTRACT

ISSN: 0964-5993

LANGUAGES: ENGLISH SUMMARY LANGUAGES: ENGLISH

Shape memory polymers that can be processed using conventional thermoplastic technologies to give mouldings and films are now available commercially. Films of these materials can be incorporated in multilayer garments, such as those that are often used in the protective clothing or leisurewear industry. Another application for these polymers that has already been developed commercially is their use in hydrophilic membranes that are permeable to **moisture** vapour. This article describes **shape memory polymers that revert within a range from ambient temperatures up to boiling point of water**. These offer great promise for making clothing with adaptive features. Designs for garments to protect against cold conditions or contact with hot objects/fluids have been developed. Now prototype films need to be evaluated.

**24/7,K/17 (Item 17 from file: 8)**

DIALOG(R) File 8: Ei Compendex(R)

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05921242 E.I. No: EIP01385472964

**Temperature sensitive water vapour permeability and shape memory effect of polyurethane with crystalline reversible phase and hydrophilic segments**

Author: Jeong, Han Mo; Ahn, Byoung Kun; Kim, Byung Kyu

Corporate Source: Univ of Ulsan, Ulsan, South Korea

Source: Polymer International v 49 n 12 2000. p 1714-1721

Publication Year: 2000

CODEN: PLYIEI ISSN: 0959-8103

Language: English

Document Type: JA; (Journal Article) Treatment: X; (Experimental)

Journal Announcement: 0110W4

Abstract: Polyurethanes based on poly(caprolactone) (PCL) diol, hexamethylene diisocyanate, 4,4 prime -diphenylmethane diisocyanate and hexamethylene diamine were modified by hydrophilic segments, diol-terminated poly(ethylene oxide) or dimethylol propionic acid (DMPA). Differential scanning calorimetry, dynamic mechanical tests, tensile tests, and measurement of **water vapour permeability** were carried out to characterize these polyurethanes. Temperature sensitive **water vapour permeability**, that is, the abrupt increase of water vapour permeability at the melting temperature of the PCL phase, was enhanced by modification with hydrophilic segments. Fatigue in **shape memory** effects was minimized

by introducing some amount of DMPA units into the polyurethane chain.  
(Author abstract) 17 Refs.

24/7,K/18 (Item 18 from file: 8)

DIALOG(R) File 8: Ei Compendex(R)

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05726841 E.I. No: EIP00125435041

Water vapor permeability of shape memory polyurethane with amorphous reversible phase

Author: Jeong, Han Mo; Ahn, Byoung Kun; Cho, Seong Mo; Kim, Byung Kyu

Corporate Source: Univ of Ulsan, Ulsan, South Korea

Source: Journal of Polymer Science, Part B: Polymer Physics v 38 n 23 Dec 2000. p 3009-3017

Publication Year: 2000

CODEN: JPBPEM ISSN: 0887-6266

Language: English

Document Type: JA; (Journal Article) Treatment: X; (Experimental)

Journal Announcement: 0101W4

Abstract: **Shape memory** thermoplastic polyurethanes (TPUs), based on amorphous soft segment from the reaction of hexamethylene diisocyanate and 1,2-butane diol, and the crystalline hard segment from 4,4 prime-methylenediphenyl diisocyanate and 1,6-hexanediol, were modified by hydrophilic segments, diol-terminated poly(ethylene oxide) or dimethylol propionic acid (DMPA). Differential scanning calorimetry, dynamic mechanical testing, tensile testing, and the measurement of **shape memory effect**, water swell, and **water vapor permeability** were carried out to examine these TPUs. The hydrophilic segment increased the hysteresis in shape memory effect by reducing the crystallinity of the hard segment. The neutralized DMPA unit enhanced the sensitivity of the thermoresponsive water vapor permeability (WVP) by amplifying the increase of WVP at the temperature range above the glass transition temperature. (Author abstract) 14 Refs.

24/7,K/21 (Item 21 from file: 119)

DIALOG(R) File 119: Textile Technol. Dig.

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0650828 200201277

'Intelligent' Polyurethanes for Interactive Clothing.

Lomax G. R.

Baxenden Chemicals

Textile Asia 32, No. 9: 39+, 8 pages (Sept. 2001).

Publication Year: 2001

CODEN: TASIDM; TASI

Language: English

Because of the interactions between diffusing water molecules and polyurethane chains, hydrophilic polyurethane membranes tend to absorb moisture and swell during use. Controlling and limiting the degree of swelling optimize breathability and permit the absorbed water to act as a plasticizer, opening up the molecular structure and allowing the transmission of **water vapor** molecules. **Water vapor** diffusion depends on the water content of the membrane and relative **humidity** and temperature at the fabric surface. Apparel finished with a hydrophilic polyurethane barrier layer responds to a build-up of **moisture vapor** by becoming more breathable. Such coatings can be used with liner fabrics, phase change materials, **shape memory** polymers, and antistatic coatings.

...Identifiers: air permeability, apparel, coatings, diffusion,

hydrophilic, molecular structure, phase change materials, polyurethanes, relative humidity, shape memory substances, surface properties, swelling, temperature

24/7,K/22 (Item 22 from file: 8)

DIALOG(R) File 8: Ei Compendex(R)

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06286327 E.I. No: EIP03057346871

**Temperature dependency of water vapor permeability of shape memory polyurethane**

Author: Zeng, Yue-Min; Hu, Jin-Lian; Yan, Hao-Jing

Corporate Source: Coll. of Textiles Dong Hua Univ., Shanghai 200051, China

Source: Journal of Dong Hua University (English Edition) v 19 n 3 September 2002. p 52-57

Publication Year: 2002

CODEN: JCTUE2 ISSN: 1000-1484

Language: English

Document Type: JA; (Journal Article) Treatment: X; (Experimental)

Journal Announcement: 0302W1

Abstract: Solution-cast films of **shape memory** polyurethane have been investigated. Differential scanning calorimetry, DMA, tensile test, **water vapor** permeability and the **shape memory** effect were carried out to characterize these polyurethane membranes. Samples cast at higher temperatures contained more hard segment in the crystalline state than a sample cast at lower temperature. The change in the **water vapor** permeability (WQVP) of SMPU films with respect to the temperature follows an S-shaped curve, and increases abruptly at  $T/m$  of the soft segment for the fractional free volume (FFV, the ratio of free volume and specific volume in polymers) increased linearly with temperature. The **water vapor** permeability dependency of the temperature and **humidity** contribute to the result of the change of diffusion and solubility with the surrounding air condition. The diffusion coefficient (D) are the function of temperature and show good fit the Arrhenius form but show different parameter values when above and below  $T/g$ . The crystalline state hard-segment is necessary for the good shape memory effect. 20 Refs.

24/7,K/24 (Item 24 from file: 119)

DIALOG(R) File 119:Textile Technol.Dig.

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0661899 200302748

**Temperature-Dependent Water Vapor Diffusion through Shape - Memory Polymer Laminates: Comparison with Other Waterproof-Breathable Laminates.**

Gibson P.

United States Army Soldier Systems Center - Natick

Fiber Society. Symposium (Abstracts) : 55+, 3 pages (Oct. 16-18, 2002).

Publication Year: 2002

CODEN: FASSXX; FASS

Language: English

3 refs.

Researchers evaluated the use of Mitsubishi Heavy Industries' Diaplex and Toray Industries' Dermizax polyurethane **shape memory** polymer membranes in water resistant, breathable fabrics for military uniforms and compared the performance of those membranes with the performance of an expanded polytetrafluoroethylene (ePTFE) membrane, Gore Tex membrane, Gore Tex XCR membrane, Sympatex laminate, The North Face's Hydroseal membrane, a ceramic

membrane, BHA Technologies' EVENT laminate, and Patagonia's Nextec membrane. The ePTFE laminate provided the greatest breathability over a temperature range of 5-40 degrees centigrade, followed by the Gore Tex XCR membrane. Temperature changes did not alter the breathability of the **shape memory** polymer membranes. **Water vapor** flux increased proportionally to vapor pressure as temperature increased.

24/7,K/25 (Item 25 from file: 34)

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

(c) 2003 Inst for Sci Info. All rts. reserv.

11572554 Genuine Article#: 669KJ Number of References: 44

**n-octadecyltriethoxysilane monolayer coated surfaces in humid atmospheres:**

**Influence of capillary condensation on surface deformation and adhesion**

Author(s): Kim S; Christenson HK; Curry JE (REPRINT)

Corporate Source: Univ Arizona, Dept Soil Water & Environm

Sci, Tucson//AZ/85721 (REPRINT); Univ Arizona, Dept Soil Water & Environm

Sci, Tucson//AZ/85721; Univ Leeds, Dept Phys & Astron, Leeds LS2 9JT/W

Yorkshire/England/

Journal: JOURNAL OF PHYSICAL CHEMISTRY B, 2003, V107, N16 (APR 24), P  
3774-3781

ISSN: 1520-6106 Publication date: 20030424

Publisher: AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036 USA

Language: English Document Type: ARTICLE

Abstract: We have investigated the **effect of humidity on surface**

**deformation** and adhesion of mica surfaces coated with

n-octadecyltriethoxysilane self-assembled monolayers using a surface forces apparatus. The Maugis model of contact elasticity based on linear elastic fracture mechanics is used to analyze the results. The Laplace pressure is assumed to act in the "Dugdale" zone outside the contact area to account for capillary condensation. We measure the radius of the contact area as a function of applied load and use the model to obtain the surface energy and elastic constant of these surfaces for humidities ranging from 0 to 99%. The limiting values in dry and near-saturated conditions are as expected from well-known theories. A significant result is that we also obtain the surface energy for intermediate **humidities**. Increasing **humidity** modifies the **deformed shape** of the surfaces in contact due to capillary condensation. The sharp bifurcation at the edge of the contact zone for low humidities (JKR-type contact) is replaced by rounded edges (DMT-type contact) with increasing humidity. This is predicted by the Maugis model and is experimentally observed using optical interference fringes of equal chromatic order. We are able to separate the capillary condensation and solid-solid contributions to the adhesive force because the Maugis model allows a direct calculation of the area on which the Laplace pressure acts. At humidities approaching saturation the forces due to capillary condensation dominate monolayer-monolayer adhesion. At lower humidities both capillary condensation and direct monolayer-monolayer interaction contribute to the overall adhesion.

24/7,K/26 (Item 26 from file: 8)

DIALOG(R)File 8:EI Compendex(R)

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06341120 E.I. No: EIP03137418616

**Title: Influence of processing conditions on the microstructure and properties of shape memory polyurethane membranes**

Author: Hu, J.L.; Zeng, Y.M.; Yan, H.J.

Corporate Source: Institute of Textiles and Clothing The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong

Source: Textile Research Journal v 73 n 2 February 2003. p 172-178

Publication Year: 2003

CODEN: TRJOA9 ISSN: 0040-5175

Language: English

Document Type: JA; (Journal Article) Treatment: X; (Experimental)

Journal Announcement: 0304W1

Abstract: Solution-cast films of **shape memory** polyurethane are investigated by Fourier transform infrared spectroscopy, differential scanning calorimetry, dynamic mechanical analysis, tensile properties, **water vapor** permeability, and **shape memory** effect tests. Samples cast at higher temperatures contain more hard segments in the crystalline state and better **water vapor** permeability than samples cast at lower temperatures. The change in **water vapor** permeability of **shape memory** polyurethane films with respect to temperature follows an S-shaped curve, and increases abruptly at  $T_g$ , the **shape memory** temperature of the soft segment. The higher the modulus ratio at two specified temperatures before and after  $T_g$ , the better the **shape memory** behavior of **shape memory** polyurethane. 13 Refs.

File 369:New Scientist 1994-2003/Nov W3  
File 370:Science 1996-1999/Jul W3  
File 9:Business & Industry(R) Jul/1994-2003/Nov 25  
File 16:Gale Group PROMT(R) 1990-2003/Nov 25  
File 160:Gale Group PROMT(R) 1972-1989  
File 20:Dialog Global Reporter 1997-2003/Nov 26  
File 148:Gale Group Trade & Industry DB 1976-2003/Nov 26  
File 481:DELPHES Eur Bus 95-2003/Nov W2  
File 621:Gale Group New Prod.Annou.(R) 1985-2003/Nov 26  
File 624:McGraw-Hill Publications 1985-2003/Nov 25  
File 635:Business Dateline(R) 1985-2003/Nov 26  
File 636:Gale Group Newsletter DB(TM) 1987-2003/Nov 25

Set	Items	Description
S1	609808	SHAPE
S2	833533	MEMORY
S3	37909	DEFORM?
S4	9297278	CHANG?
S5	16734	S1()S2 OR S1(2N)S3:S4
S6	279191	HUMID? OR MOIST?
S7	10671	WATER() (VAPOR OR VAPOUR)
S8	36668	DAMP OR DAMPNES
S9	6668591	RESPON?
S10	330095	ACTIVAT?
S11	59461	ACTUAT?
S12	318541	S6:S8
S13	101	S5(S)S12
S14	88	RD (unique items)
S15	681	S12(3N)S9
S16	806	S12(3N)S10:S11
<b>S17</b>	<b>2</b>	<b>S5(S)S15:S16</b>
S18	2285	S12(5N)S9:S11
S19	18883	S1(3N)S2:S4
S20	2	S18(S)S19
S21	0	S20 NOT S17
S22	191	SHAPE()MEMORY/DE
S23	201	PC=3399492
S24	10	S12 AND S22:S23
S25	9	S24 NOT S17
S26	7	RD (unique items)
<b>S27</b>	<b>7</b>	<b>Sort S26/ALL/PD,A</b>

17/3,AB,K/1 (Item 1 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB

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09431637 SUPPLIER NUMBER: 17843395 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**Memory alloys remember two shapes.**

O'Connor, Leo

Mechanical Engineering-CIME, v117, n12, p78(3)

Dec, 1995

ISSN: 0025-6501 LANGUAGE: English RECORD TYPE: Fulltext; Abstract

WORD COUNT: 1782 LINE COUNT: 00144

ABSTRACT: Two-way **shape memory** alloys are being developed for use in composite structures. The two-way **shape memory** effect allows the material to return to its original shape in high-temperature and low-temperature regimes. Future applications of these smart materials include implantable orthopedic devices and control equipments for aircraft wings.

... The two-way **shape memory** alloys may be usable in a closed-loop control system to alter the shape of...Technology are collaborating to develop a closed-loop active-control system that uses piezoceramic strain **actuators** to **damp** vibrations.

Piezoceramic **actuators**, capitalizing on their rapid response time, which is measured in milliseconds, can successfully damp high-frequency vibrations. But **shape memory** alloys, which respond much more slowly to a computer's commands (they take longer than...

17/3,AB,K/2 (Item 2 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB

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02837096 SUPPLIER NUMBER: 04082911 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Setting a single standard. (Table techniques, part 5; Disposables)

Minno, Maurice; Gray, Norma; Friedberg, Bonnie

Restaurant Business, v85, p75(4)

Jan 1, 1986

ISSN: 0097-8043 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT

WORD COUNT: 2106 LINE COUNT: 00162

... Single-serve tableware is vulnerable to poor storage procedures, and may actually lose strength or **change** in **shape** if warehoused improperly. Humidity is probably the biggest enemy of paper goods.

**Excessive dampness can activate the adhesives used to seal cups, causing them to gap or split,** and plastic coated...

27/3,AB,K/3 (Item 3 from file: 16)

DIALOG(R)File 16:Gale Group PROMT(R)

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03226937 Supplier Number: 44430177

**IMAGO THERMOMARKERS USE SHAPE-CHANGING MEMORY ALLOYS TO MONITOR TEMPERATURES**

News Release, pN/A

Feb 10, 1994

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; Trade

Word Count: 425

... set points cannot be changed. Perhaps most importantly in many applications, Thermomarkers are resistant to **humidity**, electric currents, water, and ionizing radiation.

Instruments based on **memory alloys** are also the only...

PRODUCT NAMES: **3399492 (Shape Memory Alloys)**

27/3,AB,K/4 (Item 4 from file: 16)

DIALOG(R)File 16:Gale Group PROMT(R)

(c) 2003 The Gale Group. All rts. reserv.

03299111 Supplier Number: 44554222

**Memory alloys eye temperature**

American Metal Market, p5

March 30, 1994

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; Tabloid; Trade

Word Count: 243

... or energy sources and no special care in operation or storage, and is resistant to **humidity**, electric currents, water and ionizing radiation.

Thermomarkers also are tamperproof as set points cannot be...

PRODUCT NAMES: **3399492 (Shape Memory Alloys)**

**27/3,AB,K/5 (Item 5 from file: 148)**

DIALOG(R) File 148:Gale Group Trade & Industry DB

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07711966 SUPPLIER NUMBER: 16663302 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**Room-temperature-functional shape-memory polymers.**

Hayashi, Shunichi; Kondo, Satoru; Kapadia, Pragna; Ushioda, Eiji

Plastics Engineering, v51, n2, p29(3)

Feb, 1995

ISSN: 0091-9578 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT

WORD COUNT: 1665 LINE COUNT: 00137

... addition to its mechanical properties, the **shape-memory** polymer has unique properties in terms of **moisture** permeability, thermal expansion, damping, and index of refraction. These large changes in various properties are...

...by making the material partially crystalline, both **shape recovery** and excellent moldability have been realized.

**Moisture Permeability**

The difference in **moisture** -permeability mechanisms above and below the [T.sub.g] is illustrated in Fig. 2. When...

...becomes active. This results in an increase in distance between molecules significant enough to allow **water vapor** molecules to be easily transmitted through the polymer film, and consequently, large changes in **moisture** permeability above and below the [T.sub.g] are generated. However, the movement in molecules...

...optimized by controlling the hard segment content of the polyurethane as well as hydrophilicity.

The **moisture** -permeability property can be utilized in clothing applications by setting the [T.sub.g] at room temperature. Clothing materials coated with **shape-memory** polymer would have low **moisture** permeability at temperatures below the [T.sub.g] and high permeability above the [T.sub.g]...engines, catheters, pipe joints, mask core material, rewritable compact discs, and clamping pins.

Use of **moisture** permeability. Sports-wear, diaper covers, and shoe inner-lining material.

Use of thermal-volume-expansion...

...DESCRIPTORS: **Shape - memory** alloys

**27/3,AB,K/6 (Item 6 from file: 369)**

DIALOG(R) File 369:New Scientist

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00127072 16722544.400 (USE FORMAT 7 OR 9 FOR FULLTEXT)

**The Mars collection**

LAFEE, SCOTT; Scott Lafee is a journalist working on The San Diego Union-Tribune

New Scientist, vol. 167, no. 2254, p. 34

September 2, 2000

LANGUAGE: English RECORD TYPE: Fulltext DOC. TYPE: Journal

WORD COUNT: 2813

TEXT: Interplanetary travellers next season will be wearing close-fitting pressurised suits of neoprene-coated fabric with a hint of Teflon, in various shades of white, not forgetting to accessorise with gloves and a helmet. Or will they? Scott Lafee checks out the next generation of spacesuits

SOME space engineers design rockets. Others work on navigation controls, fuel systems or how best to squeeze a satellite into the space

shuttle's cargo bay. But NASA engineer Joe Kosmo has a more aesthetic occupation. It's his job to design spacesuits. After thirty years working on classics like the silver Mercury suit and the ultra-accessorised shuttle outfit, Kosmo is planning his next collection. And this time he's thinking Red. Specifically, what will the well-dressed astronaut be wearing on Mars?  
TEXT:

...is so low that nitrogen evaporates out of body tissues and the lungs fill with **water vapour**. A human breathing ambient air at this altitude would black out in seconds and die...

...astronaut's strength. Newman's lab at MIT is developing an elbow joint that incorporates **shape memory** alloys, sometimes called muscle wires, to provide assistance to the astronauts once on Mars. These...

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200376  
File 347:JAPIO Oct 1976-2003/Jul(Updated 031105)  
File 371:French Patents 1961-2002/BOPI 200209

Set	Items	Description
S1	1021858	SHAPE
S2	849901	MEMORY
S3	340720	DEFORM?
S4	1322825	CHANG?
S5	33636	S1()S2 OR S1(2N)S3:S4
S6	295629	HUMID? OR MOIST?
S7	26476	WATER() (VAPOR OR VAPOUR)
S8	66171	DAMP OR DAMPNESS
S9	555651	RESPON?
S10	295633	ACTIVAT?
S11	413315	ACTUAT?
S12	35366	IC=A61L-015 OR IC=A61F-013
S13	380617	S6:S8
S14	1188628	S9:S11
S15	1500	S13(2N)S14
S16	8	S5 AND S15
<b>S17</b>	<b>3</b>	<b>S12 AND S16</b>
<b>S18</b>	<b>5</b>	<b>S16 NOT S17 [1 duplicate; 4 not relevant]</b>
S19	547	S5 AND S13
S20	7	S12 AND S19
<b>S21</b>	<b>4</b>	<b>S20 NOT S16</b>
S22	3	S5(5N)S15
S23	0	S22 NOT (S16 OR S20)

17/34/2 (Item 2 from file: 350)

DIALOG(R) File 350:Derwent WPIX  
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015369028 \*\*Image available\*\*  
WPI Acc No: 2003-429966/200340

**Disposable article such as diapers, comprises humidity responsive material capable of deforming in spatial dimension when exposed to external force and maintains degree of deformation when external force is removed**

**Patent Assignee: SOERENS D A (SOER-I); TOPOLKARAEV V A (TOPO-I)**

**Inventor: SOERENS D A; TOPOLKARAEV V A**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030060793	A1	20030327	US 2001911813	A	20010724	200340 B

Priority Applications (No Type Date): US 2001911813 A 20010724

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030060793	A1		15	A61F-013/15	

Abstract (Basic): US 20030060793 A1

NOVELTY - Disposable article such as diapers, comprises **humidity responsive** material capable of deforming in spatial dimension when exposed to external force and maintains degree of deformation when external force is removed.

DETAILED DESCRIPTION - A disposable article comprises **humidity responsive** material (HRM) attached to adhesion layer(s). HRM comprises **shape deformable** matrix material(s) (SDMM). HRM deforms in spatial dimension(s) when exposed to external force(s), maintains a degree of deformation in spatial dimension(s) once the external force is removed,

and exhibits a change or percent recovery, in spatial dimension(s) when subjected to humid environment.

USE - As diapers, training pants, adult incontinence products, sanitary napkins, tampons, health care products, wound dressings, surgical drapes, or surgical gowns (claimed).

ADVANTAGE - The shaped memory in the disposable articles is activated when the products are exposed to high humidity or moist environments, without using an inefficient thermal heating activation process and without substantially increasing the temperature of the material. The material, which retains their integrity during use, is easily disposed of, and has the ability to change to a desired shape and/or texture during in use-conditions. Upon exposure to a high humidity environment, the disposable product transforms to a desired product configuration, which guards against leakage. The materials maximizes the amount of locked in **shape deformation** within the material, as well as, maximizes the percent change in spatial dimension(s) of the material. A change in spatial dimension(s) of the material is caused without a substantial change in the temperature of the material. Recovery includes subjecting the material to a level of humidity or moisture to cause a desired change in spatial dimension(s) without a substantial change in the temperature of the material.

DESCRIPTION OF DRAWING(S) - The figure shows a partially cut away top plan view of an absorbent article.

disposable diaper (20)

strips (34,36)

pp; 15 DwgNo 2/2

#### Technology Focus:

TECHNOLOGY FOCUS - POLYMERS - Preferred Components: SDMM comprises a polymer such as polyester-based thermoplastic polyurethane, polyether-based polyurethane, polyethylene oxide, poly (ether ester) block copolymer, polyamide, poly (amide ester), poly (etheramide) copolymer, polyvinyl alcohol, polyvinyl pyrrolidone, polyvinyl pyridine, polyacrylic acid, polymethacrylic acid, polyaspartic acid, maleic anhydride methyl vinyl ether copolymers of varying degrees of hydrolysis, polyvinyl methyl ether copolymers of polyacrylic acid and polyacrylic ester and/or segmented block copolymer having hard/soft segment(s). The soft and/or hard segments contain functional groups or receptor sites that are **responsive** to **humidity**. The functional groups are selected from urea, amide, nitro, nitrile, ester, ether, hydroxyl, ethylene oxide, amine groups, carboxylic acid salts, sulfonic acid salts, ionic groups, and receptor sites having an unbalanced charge distribution formed from the above group(s). SDMM comprises a segmented block copolymer comprising an elastomer selected from polyurethane-, polyether-, poly (ether amide)-, polyether polyester-, polyamide-based-elastomers, thermoplastic polyurethane, poly (ether-amide) block copolymers, thermoplastic rubbers, styrene-butadiene copolymers, silicon rubbers, synthetic rubbers, butyl rubber, styrene isoprene copolymers, styrene ethylene butylene copolymers and/or ethylene-vinyl acetate copolymer, preferably polyurethane elastomers or poly (ether amide) elastomers. SDMM comprises a multilayer or micro-layer structure having separate layers of an elastomeric polymer and a non-elastomeric polymer. Alternately, SDMM comprises a blend of an elastomeric polymer and a non-elastomeric polymer. The non-elastomeric polymer is a moisture-absorbing polymer exhibiting at least 20%, preferably 50% reduction in modulus when the material is exposed to a humid environment. The moisture-absorbing

polymer comprises polyethylene oxide, polyethylene glycol, polyvinyl alcohol, polyvinyl pyrrolidone and/or polyvinyl pyridine. The elastomeric polymer comprises thermoplastic polyurethane, poly (ether-amide) block copolymers, thermoplastic rubbers, styrene-butadiene copolymers, silicon rubbers, synthetic rubbers, butyl rubber, styrene isoprene copolymers, styrene ethylene butylene copolymers, nylon copolymers, spandex fibers comprising segmented polyurethane and/or ethylene-vinyl acetate copolymer. Preferred Article: The disposable article further comprises a non-activatable additional material selected from non-elastomeric polymers, tackifiers, antiblocking agents, fillers, antioxidants, UV, stabilizers and/or polyolefin based polymers.

Preferred Layers: The additional layer(s) are selected from films, nonwoven webs, woven fabrics and/or foams.

Preferred Amount: SDMM comprises 5-90 (10-60) weight% (wt.%) moisture absorbing polymer and 10-95 (50-70) wt.% of elastomeric polymer. HRM comprises 40-99.5 (60-99.5) wt.% of **shape deformable** polymer and 60-0.5 (40-0.5) wt.% of additional non-activatable material.

Extension Abstract:

EXAMPLE - A multilayer film of eight alternating layers of MORTHANE PS370-200 (polyurethane (PU)) and polyethylene oxide (PEO) resin was produced. Powder form POLYOX WSR-N-3000 (PEO resin) was pelletized. Rectangular strips (34,36) of multilayer PU PS370-200/PEO (50/50) film were stretched to 6 times their original length at 25degreesC. The resulting latent deformation was 340% in film length. The stretched film sample was placed in an environmental oven held at 37degreesC and 80% relative humidity. After 20 minutes in the environmental oven the sample was removed and dimensions were measured. The dimensional change of the film in machine direction was 32% as compared to the stretched-film length. Rectangular strips of MORTHANE PS370-200 were stretched using a slow stretch rate and a fast stretch rate. The strips were stretched up to 6 times their initial length at three separate temperatures, 25degreesC, 50degreesC and 70degreesC. The stretch rate and draw ratio did not significantly effect the percent latency of MORTHANE PS370-200. The (stretch) temperature had a significant effect on the percent latency of MORTHANE PS370-200. Also effects of stretch hold and cooling rate on the amount of locked-in shaped deformation was studied. The results of the MORTHANE PS370-200 samples at 90degreesC indicated that stretch holding and cooling rate had a more significant effect on the percent latency than similar samples tested at 70degreesC. In these samples, slow cooling produced the best results in percent latency.

Derwent Class: A18; A28; A96; D22; F07; P32  
International Patent Class (Main): **A61F-013/15**  
International Patent Class (Additional): **A61F-013/20**

21/34/2 (Item 2 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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010121324 \*\*Image available\*\*  
WPI Acc No: 1995-022575/199503

Resilient prestressed honeycomb structure for protecting electronic instruments - cushions defined planar surface along its lateral length by continuous deformation

Patent Assignee: HEXACOMB CORP (HEXA-N); PACTIV CORP (PACT-N); TENNECO

PACKAGING INC (TENC )  
Inventor: CARDER R C; JAEGERS R E; REED R R; WOODWARD W B  
Number of Countries: 025 Number of Patents: 014  
Patent Family:

Patent No.	Kind	Date	Applicat No	Kind	Date	Week	
WO 9427814	A1	19941208	WO 94US5950	A	19940526	199503	B
AU 9470463	A	19941220	AU 9470463	A	19940526	199512	
			WO 94US5950	A	19940526		
BR 9406661	A	19960130	BR 946661	A	19940526	199612	
			WO 94US5950	A	19940526		
EP 705165	A1	19960410	EP 94919256	A	19940526	199619	
			WO 94US5950	A	19940526		
US 5540972	A	19960730	US 9370097	A	19930528	199636	
JP 8510700	W	19961112	WO 94US5950	A	19940526	199708	
			JP 95500968	A	19940526		
EP 705165	A4	19970402	EP 94919256	A		199732	
US 5804030	A	19980908	US 9370097	A	19930528	199843	
			WO 94US5950	A	19940526		
			US 96553582	A	19960318		
US 5958549	A	19990928	US 9370097	A	19930528	199947	
			US 96553582	A	19960318		
			US 98148257	A	19980904		
CA 2163864	C	20001010	CA 2163864	A	19940526	200056	
			WO 94US5950	A	19940526		
MX 9404044	A1	20000801	MX 944044	A	19940530	200137	
EP 705165	B1	20020213	EP 94919256	A	19940526	200212	
			WO 94US5950	A	19940526		
DE 69429863	E	20020321	DE 629863	A	19940526	200227	
			EP 94919256	A	19940526		
			WO 94US5950	A	19940526		
ES 2172537	T3	20021001	EP 94919256	A	19940526	200275	

Priority Applications (No Type Date): US 9370097 A 19930528; US 96553582 A 19960318; US 98148257 A 19980904

Cited Patents: US 2720948; US 2728479; US 4229243; US 5180619; DE 4237025

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9427814	A1		50	B32B-003/12	
					Designated States (National): AU BR CA CN JP KR US
					Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
AU 9470463	A			B32B-003/12	Based on patent WO 9427814
BR 9406661	A			B32B-003/12	Based on patent WO 9427814
EP 705165	A1 E	1		B32B-003/12	Based on patent WO 9427814
					Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE
US 5540972	A		12	B32B-003/12	
JP 8510700	W		48	B32B-003/12	Based on patent WO 9427814
EP 705165	A4			B32B-003/12	
US 5804030	A			B32B-003/12	CIP of application US 9370097 CIP of patent US 5540972 Based on patent WO 9427814
US 5958549	A			B32B-003/12	CIP of application US 9370097 Div ex application US 96553582 CIP of patent US 5540972 Div ex patent US 5804030
CA 2163864	C E			B32B-003/12	Based on patent WO 9427814

MX 9404044 A1 A61F-013/00  
EP 705165 B1 E B32B-003/12 Based on patent WO 9427814  
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI LU MC  
NL PT SE  
DE 69429863 E B32B-003/12 Based on patent EP 705165  
Based on patent WO 9427814  
ES 2172537 T3 B32B-003/12 Based on patent EP 705165  
Abstract (Basic): WO 9427814 A

The honeycomb structure includes conditioned honeycomb with opposed hollow cell faces forming planar surfaces. One of the faces has been compressively **deformed** laterally along its planar surface to a given depth. This provides a continuous cushioned face portion. The face portion is sufficiently resilient to cushion all surfaces of a body in contact with it uniformly.

The structure is compressed to reduce its thickness by up to about a half without loss of strength or rigidity. The face portion defines an irregular planar surface. Opposite face sheets are secured to the structure.

USE/ADVANTAGE - For protecting glass and porcelain in transit.  
Biodegradable. Light-weight structure.

Abstract (Equivalent): US 5540972 A

A method of simultaneously forming and shaping a resilient prestressed paper honeycomb structure having a substantially continuous resilient cushioned face portion, the method comprising the steps of:

a) exposing a paper honeycomb structure of preselected thickness and length to a conditioning environment where the ambient air temperature and relative **humidity** are controlled to dry or **humidify** the paper honeycomb structure;

b) maintaining said honeycomb structure in the conditioning environment for a period sufficient to dry or **humidify** the paper honeycomb structure to a **moisture** level of about 4 percent by weight to less than about 8 percent by weight;

c) thereafter cutting the conditioned honeycomb structure to a predetermined size and **shape** while simultaneously **deforming** the conditioned honeycomb structure laterally substantially continuously along one planar surface by compressing it to a predetermined depth to provide a honeycomb structure having a substantially continuous resilient prestressed cushioned face portion with substantially no loss of structural rigidity and strength; and

d) releasing the compression and removing the resulting resilient prestressed honeycomb structure.

Dwg.2a/9

Derwent Class: P32; P73; V04

International Patent Class (Main): **A61F-013/00** ; B32B-003/12

21/34/3 (Item 3 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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008021639

WPI Acc No: 1989-286751/198940

Sanitary towel with deformable element - lateral compression of element  
by wearer makes towel mould to wearer's body

Patent Assignee: PROCTER & GAMBLE CO (PROC )

Inventor: BUELL K B

Number of Countries: 020 Number of Patents: 014

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 335252	A	19891004	EP 89105192	A	19890323	198940 B
AU 8932241	A	19891005				198948
BR 8901524	A	19900301				199013
US 5171302	A	19921215	US 88175817	A	19880331	199301
			US 92825456	A	19920121	
AU 633813	B	19930211	AU 8932241	A	19890330	199313
EP 335252	A3	19920812	EP 89105192	A	19890323	199336
CA 1324460	C	19931123	CA 599182	A	19890330	199402
US 5300055	A	19940405	US 88175817	A	19880331	199413
			US 92825456	A	19920121	
			US 92989276	A	19921211	
PH 28970	A	19950630	PH 38385	A	19890327	199902
SG 54289	A1	19981116	SG 967847	A	19890323	199928
KR 131762	B1	19980413	KR 894094	A	19890330	200011
EP 335252	B1	20011219	EP 89105192	A	19890323	200206
DE 68929358	E	20020131	DE 629358	A	19890323	200216
			EP 89105192	A	19890323	
ES 2166350	T3	20020416	EP 89105192	A	19890323	200230

Priority Applications (No Type Date): US 88175817 A 19880331; US 92825456 A 19920121; US 92989276 A 19921211  
 Cited Patents: No-SR.Pub; EP 136524; US 3343543; US 3411504; US 3570493; US 4195634; US 4405326

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 335252	A	E	28		
Designated States (Regional): AT BE CH DE ES FR GB GR IT LI LU NL SE					
US 5171302	A		23	A61F-013/16	Cont of application US 88175817
AU 633813	B			A61F-013/46	Previous Publ. patent AU 8932241
CA 1324460	C			A61F-013/00	
US 5300055	A		24	A61F-013/16	Cont of application US 88175817 Cont of application US 92825456 Cont of patent US 5171302
PH 28970	A			A61F-013/16	
SG 54289	A1			A61F-013/15	
KR 131762	B1			A61F-013/15	
EP 335252	B1	E		A61F-013/15	
Designated States (Regional): BE DE ES FR GB GR IT NL SE					
DE 68929358	E			A61F-013/15	Based on patent EP 335252
ES 2166350	T3			A61F-013/15	Based on patent EP 335252

Abstract (Basic): EP 335252 A

Sanitary towel has flexure-resistant **deformation** element which takes up a convex upward configuration when laterally compressed. The element may be mouldable, reformable and/or resilient.

USE/ADVANTAGE - Sanitary towel whcih through its construction conforms to the shape of the wearer and provides enhanced fit and comfort. The towel is laterally compressed by the wearer's thighs so that the **deformation** element adjusts **shape** with movement of the wearer.

Dwg.0/27

Abstract (Equivalent): US 5171302 A

Externally worn disposable absorbent article has an absorbent core (40) between a liquid pervious top sheet and an impervious back sheet secured to the top sheet. A **moisture** -stable element (20) bends in a predetermined manner into a convex upward shape when the article is subjected to lateral compression and comprises a flexure hinge creating

a different bend resistance across the width of the element. The element is connected to and in vertical register with the core.

The element is pref. of polyethylene, polypropylene, polyester, polybutylene, polyurethane, EVA, thermo-bondable cellulose, latex or silicone elastomer, and has a central longitudinal hinge (23A), a pair of longitudinal arcuate thigh hinges (23B) and a pair of protuberance hinges (23C) adjacent to the midpoint of the thigh hinge arc.

USE/ADVANTAGE - Used as a sanitary napkin. Provides enhanced fit and comfort by promoting self-conforming cooperation with the wearer

Derwent Class: A96; D22; F07; P32

International Patent Class (Main): **A61F-013/00 ; A61F-013/15 ;  
A61F-013/16 ; A61F-013/46**

International Patent Class (Additional): **A61F-013/18**

File 348:EUROPEAN PATENTS 1978-2003/Nov W03  
File 349:PCT FULLTEXT 1979-2002/UB=20031120,UT=20031113

Set	Items	Description
S1	422406	SHAPE
S2	225327	MEMORY
S3	168375	DEFORM?
S4	1242377	CHANG?
S5	21740	S1()S2 OR S1(2N)S3:S4
S6	169313	HUMID? OR MOIST?
S7	22686	WATER() (VAPOR OR VAPOUR)
S8	10837	DAMP OR DAMPNES
S9	448706	RESPON?
S10	318270	ACTIVAT?
S11	176685	ACTUAT?
S12	13199	IC=A61L-015 OR IC=A61F-013
S13	187533	S6:S8
S14	684014	S9:S11
<b>S15</b>	<b>7</b>	<b>S5(S)S13(3N)S14</b>
S16	293	S5(S)S13
S17	12	S12 AND S16
<b>S18</b>	<b>10</b>	<b>S17 NOT S15</b>
S19	276	S16 NOT (S15 OR S17)
<b>S20</b>	<b>7</b>	<b>S19/TI,AB</b>

15/3,AB,K/5 (Item 3 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT  
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00793432

**METHODS AND DEVICES FOR TREATING URINARY INCONTINENCE OR OBSTRUCTION  
METHODES NON INVASIVES ET AVEC EFFRACTION MINIMALE ET DISPOSITIFS POUR LE  
TRAITEMENT DE L'INCONTINENCE URINAIRE OU DE L'OBSTRUCTION URINAIRE**

Patent Applicant/Inventor:

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(Residence), US (Nationality)

YEUNG Teresa T, 834 North White Road, San Jose, CA 95127, US, US  
(Residence), US (Nationality)

Patent and Priority Information (Country, Number, Date):

Patent: WO 200126588 A2-A3 20010419 (WO 0126588)

Application: WO 2000US15650 20000607 (PCT/WO US0015650)

Priority Application: US 99159338 19991013; US 99170475 19991213

Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK  
DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR  
LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ  
TM TR TT TZ UA UG US UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 17415

English Abstract

For treating urinary incontinence, an internal urethral support (104) is inserted non-invasively through the opening of a urethra (101) and anchored in the resilient mucosa (113) to improve sphincteric closure during stress, by supporting and strengthening the urethra (101)

particularly its posterior wall (119). For open sphincters even at rest, the internal urethral support (104) is also used as an internal urethral anchor, mounting a **shape memory** element, magnet or extensor, to close the urethral sphincter. In a minimally invasive surgery, the bladder neck and/or urethra are partially ligated to restrict the lumen (100) opening and to improve closure capability. The restricted lumen (100) is reproducibly sized and limited by a spacer inserted through the urethra. For urethral obstruction, similar urethral insertion devices can also be used to stretch and stiffen the urethral wall against an obstruction to widen the lumen opening from within and to promote urine flow.

Fulltext Availability: Detailed Description  
Detailed Description

... linking with other devices, without interfering with the bending capability, as shown in Figure 34.

**Shape - Memory Induced Urethral Closure**

For patients with constant leakage due to their open urethral 101 sphincters...resistance. The present invention provides a non-invasive alternative, a sphincteric shaper 152 containing a **shape memory** or elastic rod 146, which can be inserted near the posterior urethral wall 119 and anchored by internal urethral supports 104 as indicated in Figure 37. The **shape memory** rod 146, three anchoring internal urethral supports 104 and two round end caps 148 to...

...in Figure 35. To prevent shifting of the anchoring internal urethral supports 104 along the **shape memory** rod 146 during device installation, IUS separators 149 are inserted as indicated in Figure 36... separators 149 can be made with biodegradable materials, such as PLA or PGA, or with **moisture activated** disintegrating materials, such as gelatin or collagen. In the urethra 101, the anchored **shape memory** or elastic rod 146 resumes the pre-disposed curvature, pulling the posterior 119 wall forward...  
...lumen 100 as shown in Figure 37. Figure 38 depicts a longitudinal view of the **shape memory** induced lumen 100 closure, created by the inwardly indented posterior wall 119 embedded with the...

15/3,AB,K/6 (Item 4 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT  
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00318035

AN ASSEMBLY AND METHOD FOR PREVENTION OF URINARY INCONTINENCE IN HUMANS  
ENSEMBLE ET PROCEDE DE PREVENTION DE L'INCONTINENCE URINAIRE CHEZ L'HOMME

Patent Applicant/Assignee:

UROMED CORPORATION,

Inventor(s):

SIMON John G,  
MAXFIELD-BAHR Michelle,  
MCLAUGHLIN Paul D,  
FELICE Leo C,  
JOSHI Sharad,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9600542 A1 19960111  
Application: WO 95US8157 19950629 (PCT/WO US9508157)  
Priority Application: US 94267487 19940629; US 94274995 19940713

Designated States: AM AT AU BB BG BR BY CA CH CN CZ DE DK ES FI GB GE HU JP  
KE KG KP KR KZ LK LT LU LV MD MG MN MW NO NZ PL PT RO RU SD SE SI SK TJ  
TT UA UZ VN KE MW SD SZ UG AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT  
SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG

Publication Language: English  
Fulltext Word Count: 14699  
English Abstract

This invention is an assembly for prevention of urinary incontinence, the assembly comprising an applicator (4), and an elastomer body (2). The applicator (4) is adapted to position the elastomer body (2) in the urethra of a human, includes a support portion (10) for retaining the elastomer body (2), and a manipulable portion (12) for positioning the elastomer body (2) in the urethra. A urethral plug assembly (300) having an anchoring member (307) defining an aperture (309), and having adhesive (311) thereon, wherein the adhesive (311) anchors the anchoring member (307) to tissue surrounding the meatus urinary.

Fulltext Availability: Detailed Description  
Detailed Description

... a body 602 of known polyurethane-based polymer, which provides the plug assembly 600 with **shape memory**. The unique characteristic of the plastic polymer is its automatically triggered **shape memory**, which allows the body 602, constructed of the **shape memory** polymer, to be inserted into the urethra in a relatively compressed and elongated state, and regain a useful shape in response to a selected transition temperature, typically body temperature. The **shape memory** material, however, may alternatively comprise a hydrophilic material (not shown) capable of expanding in **response to moisture** or pH gradations. Similar to the above embodiments, the body 602 terminates in a...

15/3,AB,K/7 (Item 5 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT  
(c) 2003 WIPO/Univentio. All rts. reserv.  
00290819

URETHRAL PLUG HAVING ADHESIVE SEALING CAPABILITIES  
BOUCHON URETRAL PORTANT UN ADHESIF LUI CONFERANT DES CAPACITES D'ETANCHEITE

Patent Applicant/Assignee:

UROMED CORPORATION,

Inventor(s):

SIMON John G,  
MCLAUGHLIN Paul D,  
FELICE Leo C,  
JOSHI Sharad,  
SYAD Azhar,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9508968 A1 19950406  
Application: WO 94US10606 19940920 (PCT/WO US9410606)  
Priority Application: US 93124264 19930920

Designated States: AT AU BB BG BR CA CH CN CZ DE DK ES FI GB HU JP KP KR LK  
LU MG MN MW NL NO NZ PL PT RO RU SD SE SK UA AT BE CH DE DK ES FR GB GR  
IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG

Fulltext Word Count: 6722

English Abstract

A novel urethral plug assembly (1) having adhesive (6) which seals the plug assembly (1) against an internal wall thereby arresting movement of the plug assembly (1). The plug assembly (1) may comprise a solid body (2) which is of a sufficient diameter to occlude the urethra. Alternatively, the plug assembly (1) may comprise a body which has the **ability to change its shape** from a compressed to an elongated condition. In one embodiment of the invention, the adhesive (6) lies on the meatal plate (4) so as to secure the plug assembly (1) against the meatus urinarius. In a second embodiment, the adhesive (106) is on the body

(102) of the plug assembly (100) so as to seal the plug assembly (100) against the urethra bladder neck or bladder wall. In a third embodiment, the adhesive (206) is on a portion of the meatal plate (204) so as to seal the plug assembly (200) at the tissue surrounding the meatus urinarius. The adhesive (206) seals the plug assembly (200) in place until the wearer wishes to void, at which point, the seal may be broken by the exertion of a downward pulling force on the plug assembly.

Fulltext Availability: Detailed Description

Detailed Description

... of a tube 302 of known polyurethane-based polymer which provides the plug 300 with **shape memory**. The unique characteristic of the plastic polymer is its automatically triggered **shape memory**, which allows the tube constructed of the **shape memory** polymer to be inserted into the urethra in a relatively compressed and elongated state, and transition temperature, that being body temperature. The **shape memory** material however, may alternatively comprise a hydrophillic material (not shown) capable of expanding in **response** to **moisture** or pH gradations. Like the above embodiments, the tube 302 terminates in a meatal plate...

18/3,AB,K/1 (Item 1 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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00462147

Liquid absorption agent

Flussigkeitsabsorbierendes Mittel

Agent d'absorption de liquide

PATENT ASSIGNEE:

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Minato-ku, Tokyo, (JP), (Proprietor designated states: all)

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Nakamura, Hitoshi c/o Showa Denko K.K., Oita Research Laboratory, 2, Oaza  
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Hosoda, Yoshikazu, c/o Showa Denko K.K., Kagakuhin Kenkyusho, 5-1,  
Ohgimachi, Kawasaki-ku, Kawasaki-shi Kanagawa, (JP)

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Strehl Schubel-Hopf & Partner (100941), Maximilianstrasse 54, 80538  
Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 473881 A1 920311 (Basic)

EP 473881 B1 011107

APPLICATION (CC, No, Date): EP 91107965 910516;

PRIORITY (CC, No, Date): JP 90230550 900903

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: C08F-226/02; **A61L-015/24** ; **A61L-015/60** ;  
C08F-026/02

ABSTRACT EP 473881 A1

A liquid absorption agent for water or organic solvents comprising, as a main component, a crosslinked N-vinylcarboxylic acid amide resin comprising the backbone chain of a homopolymer or copolymer comprising repeating units of the formula shown below crosslinked with a crosslinking agent: (see image in original document) wherein R(sup 1), R(sup 2), and R(sup 3) independently represent a hydrogen atom or methyl;

X represents a group -COOY, wherein Y represents a hydrogen atom, an alkali metal, C(sub 1) - C(sub 6) alkyl, or lower alkyl substituted with hydroxyl, dialkylamino or quaternary ammonium group; a group -CONHZ,

wherein Z represents a hydrogen atom or lower alkyl substituted with a dialkylamino group, quaternary ammonium group, sulfonic acid or an alkali metal salt thereof; cyano, 2-ketopyrrolidinyl, lower alkoxy, lower acyl, lower acyloxy or lower alkyl substituted with sulfonic acid or an alkali metal salt thereof, with a proviso that when R(sup 3) is methyl, X is not cyano, 2-ketopyrrolidinyl, lower alkoxy, lower alkylcarbonyl, lower alkoxy carbonyl and lower alkyl substituted with sulfonic acid or a salt thereof;

M represents a hydrogen atom or an alkali metal;

p represents 0 or 1; and

a molar ratio of m:n is 50 - 100 : 50 - 0.

ABSTRACT WORD COUNT: 203

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	399
CLAIMS B	(English)	200145	425
CLAIMS B	(German)	200145	365
CLAIMS B	(French)	200145	471
SPEC A	(English)	EPABF1	10566
SPEC B	(English)	200145	10411

Total word count - document A 10965

Total word count - document B 11672

Total word count - documents A + B 22637

...SPECIFICATION **humidity**: 95%), the weight of each **moisture** absorbent after **moisture** absorption was determined, and the **change** in **shape** thereof was visually observed. The results are summarized in the following Table 9.

Sample Resin...

...SPECIFICATION 200 mesh sieve was used as a **moisture** absorbent 6.

50 g each of the **moisture** absorbents prepared above was allowed to stand in a thermo-hygrostat (temperature: 30(degree)C; **humidity** : 95%), the weight of each **moisture** absorbent after **moisture** absorption was determined, and the **change** in **shape** thereof was visually observed...

18/3,AB,K/3 (Item 3 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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00243554

**Disposable absorbent product having resilient scalloped edge, and method of making the product.**

**Wegwerfbares, absorbierbares Produkt, versehen mit einem elastischen, bogenformigen Rand und Verfahren zu seiner Herstellung.**

**Article absorbant jetable ayant une bordure elastique echancree et procede pour sa fabrication.**

PATENT ASSIGNEE:

THE PROCTER & GAMBLE COMPANY, (200173), One Procter & Gamble Plaza,  
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BE;DE;FR;GB;IT;NL)

INVENTOR:

Gebel, James Matthew, 4956 Western Hills Avenue, Cincinnati, OH 45238, (US)

LEGAL REPRESENTATIVE:

Patentanwalte TER MEER - MULLER - STEINMEISTER & PARTNER (100065),  
Mauerkircherstrasse 45, W-8000 Munchen 80, (DE)

PATENT (CC, No, Kind, Date): EP 235854 A1 870909 (Basic)

EP 235854 B1 911002

APPLICATION (CC, No, Date): EP 87200276 870220;

PRIORITY (CC, No, Date): US 834688 860228  
DESIGNATED STATES: BE; DE; FR; GB; IT; NL  
INTERNATIONAL PATENT CLASS: **A61F-013/15**  
ABSTRACT EP 235854 A1

Disposable absorbent product having resilient scalloped edge, and method of making the product.

A disposable absorbent product such as a panty liner (20) (or pantiliner) or sanitary napkin or product for incontinents having a resilient, scalloped perimetrical edge, (21) and a method of making the product. In a preferred laminated embodiment, a resilient absorbent core (25) lamina is disposed between and coextensive - at least in their edge areas - with a liquid permeable topsheet (23) and a liquid barrier backsheets. The elements are bonded together by a multiplicity of perimetrically spaced, compacted bonded areas which impart a scalloped character to the edge of the product, and wherein each scallop is filled with an edge portion of the resilient absorbent core lamina. Each bonded area is preferably elongate, and orthogonally disposed with respect to the edge of the product; and, preferably, each bonded area comprises a plurality of concatenated discrete bonds (32) for improved flexibility.

ABSTRACT WORD COUNT: 157

LANGUAGE (Publication, Procedural, Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	427
CLAIMS B	(German)	EPBBF1	420
CLAIMS B	(French)	EPBBF1	502
SPEC B	(English)	EPBBF1	2897

Total word count - document A 0

Total word count - document B 4246

Total word count - documents A + B 4246

...SPECIFICATION without the application of external forces, it will return to essentially its original size and **shape** after **deforming** forces are removed. Preferably, the resilient absorbent core possesses sufficient such resilience that it will...

...the compressing forces are removed. Its resilience should be essentially unaffected by the presence of **moisture** such as the **moisture** in vaginal discharges; that is to say, the resilient absorbent core should be essentially **moisture** insensitive.

The resilient absorbent core should be of relatively low density so that it has...

**18/3,AB,K/4 (Item 1 from file: 349)**

DIALOG(R) File 349:PCT FULLTEXT

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01064643

**CARBOXYMETHYLATED CELLULOSIC WOUND DRESSING**

**PANSEMENT CELLULOSIQUE CARBOXYMETHYLE**

Patent Applicant/Assignee:

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GB, GB (Residence), GB (Nationality), (For all designated states  
except: US)

Patent Applicant/Inventor:

BRAY Roger, 6 Hollinwell Close, Whitestone, Nuneaton CV11 6TU, GB, GB  
(Residence), GB (Nationality), (Designated only for: US)

Legal Representative:

HALE Stephen Geoffrey (agent), J.Y. & G.W. Johnson, Kingsbourne House,

229-231 High Holborn, London WC1V 7DP, GB,  
Patent and Priority Information (Country, Number, Date):

Patent: WO 200392755 A1 20031113 (WO 0392755)  
Application: WO 2003GB1926 20030502 (PCT/WO GB0301926)  
Priority Application: GB 200210233 20020503

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT  
RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE  
SI SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English  
Filing Language: English  
Fulltext Word Count: 2744  
English Abstract

Wound dressings in the form of a body-shaped component are composed of body-shaped cellulosic fabric which has been carboxymethylated at the wound-contacting surface. The body-shaped component composed of a fabric comprising a cellulosic material is subjected to a carboxymethylation process to carboxymethylate the cellulosic material at the wound-contacting surface.

Main International Patent Class: **A61L-015/28**

Fulltext Availability: Detailed Description

Detailed Description

... surface after provision in body-shaped form. Such dressings are particularly suitable for use on **moist** or exuding wounds that are either extensive or otherwise difficult to treat with conventional dressings...  
...have a three dimensional shape as opposed to being flat, albeit they are flexible or **deformable**. Their **shape** is such that when placed on a body part they are able to remain there...

**18/3,AB,K/5 (Item 2 from file: 349)**

DIALOG(R) File 349:PCT FULLTEXT  
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00978270

A TAMPON  
TAMPON

Patent Applicant/Inventor:

LAMB Peter James Brian, 12 Clifford Road, Irene, 1675 Pretoria, ZA, ZA  
(Residence), ZA (Nationality)

Legal Representative:

VAN DER WALT Louis Stephanus (agent), Adams & Adams, Adams & Adams Place,  
1140 Prospect Street, Hatfield, P.O. Box 1014, 0001 Pretoria, ZA,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200307862 A2 20030130 (WO 0307862)  
Application: WO 2002IB2815 20020719 (PCT/WO IB0202815)  
Priority Application: ZA 20015966 20010719; ZA 20017563 20010913

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO  
RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 7556

English Abstract

This invention relates to a tampon (10). The tampon includes an elongate absorbent body (12) and at least one surface formation (34, 36, 38, 40) applied over an exterior surface of the absorbent body. The at least one surface formation is of a material different to the absorbent body and is configured to inhibit expansion of at least a portion of the absorbent body i-n use due to absorption of menses by the absorbent body, and/or to facilitate insertion and seating of the tampon in a vagina. The invention extends to a tampon which includes an elongate absorbent body which is non-circular in outline in end view. The invention further extends to a tampon which has a particular correct angular orientation relative to its longitudinal axis, with which it is to be inserted into a vagina, the correct angular orientation being clearly visible to a user.

Main International Patent Class: **A61F-013/00**

Fulltext Availability: Detailed Description

Detailed Description

... a rectangular absorbent body into a cylindrical shape. When such a prior art tampon becomes **moist**, the seam may widen as the absorbent body 5 swells, effectively **changing** the **shape** of the absorbent body from being circular cylindrical to being more oval or flattened. This...  
...However, when the seam is located along one of the sides of the tampon, the **change** in **shape** of the absorbent body is undesirable and actually leads to leakage of menstrual fluid...

**18/3,AB,K/6** (Item 3 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00827138

**ABSORBENT ARTICLE WITH THERMAL CELL**

**ARTICLE ABSORBANT COMPRENANT UNE CELLULE THERMIQUE**

Patent Applicant/Assignee:

THE PROCTER & GAMBLE COMPANY, One Procter & Gamble Plaza, Cincinnati, OH 45202, US, US (Residence), US (Nationality)

Inventor(s):

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KLINE Mark James, 5265 Ponderosa Drive, Cincinnati, OH 45239, US,  
EHRNSPERGER Bruno Johannes, Bonner Strasse 5, 65812 Bad Soden am Taunus, DE,

BECKMAN Tracey Elaine, 1 Deerhill Lane, Greenhills, OH 45218, US,  
FISHER Constance Lee, 11755 Springfield Pike, Cincinnati, OH 45246, US,  
SCHMIDT Mattias, Charlotte-Rosenthal-Str. 21, 65510 Idstein, DE,  
ROE Donald Carroll, 6324 Emberwood Court, West Chester, OH 45069, US,  
TEPPER Bruce Ernest, 5700 Charteroak Drive, Cincinnati, OH 45236, US,

Legal Representative:

REED T David (et al) (agent), The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217-1087, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200160305 A1 20010823 (WO 0160305)

Application: WO 2001US4608 20010214 (PCT/WO US0104608)

Priority Application: US 2000504765 20000215; US 2000504485 20000215

Designated States: AE AG AL AM AT AT (utility model) AU AZ BA BB BG BR BY

BZ CA CH CN CR CU CZ CZ (utility model) DE DE (utility model) DK DK  
(utility model) DM DZ EE EE (utility model) ES FI FI (utility model) GB  
GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA  
MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SK (utility model)  
SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 9330

English Abstract

An absorbent article which includes a thermal cell actuator capable of adding or removing heat to or from at least a portion of the absorbent article to perform a useful function on the article. The thermal cell actuator may be activated by an action of the wearer or caregiver or by environmental conditions between the article and wearer.

Main International Patent Class: **A61F-013/84**

Fulltext Availability: Detailed Description

Detailed Description

... impact breathability of the article. For example, if the article includes materials made from certain **shape memory** polymers, such as DiA-PLEX (Mitsubishi International Corp.), breathability of portions made from that material...

...varied depending on the specific polymer formulation. Such materials are described in an article entitled, "**Water Vapor** Permeability of **Shape Memory** Polyurethane with Amorphous Reversible Phase" by Jeong, et. al in Journal of Polymer Science: Part...

**18/3,AB,K/7 (Item 4 from file: 349)**

DIALOG(R) File 349:PCT FULLTEXT

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00827132

**ABSORBENT ARTICLE WITH PHASE CHANGE MATERIAL**

**ARTICLE ABSORBANT COMPRENANT UN MATERIAU A CHANGEMENT DE PHASE**

Patent Applicant/Assignee:

THE PROCTER & GAMBLE COMPANY, One Procter & Gamble Plaza, Cincinnati, OH  
45202, US, US (Residence), US (Nationality)

Inventor(s):

SCHMIDT Mattias, Charlotte Rosenthal Str. 21, 65510 Idstein, DE,  
KLINE Mark James, 5265 Ponderosa Drive, Cincinnati, OH 45239, US,  
EHRNSPERGER Bruno Johannes, Bonner Strasse 5, 65812 Bad Soden am Taunus,  
DE,  
SPRENGARD-EICHEL Cornelia, Liederbacher Strasse 31, 65929 Frankfurt, DE,  
TEPPER Bruce Ernest, 5700 Charteroak Drive, Cincinnati, OH 45236, US,

Legal Representative:

REED T David (et al) (agent), The Procter & Gamble Company, 5299 Spring  
Grove Avenue, Cincinnati, OH 45217-1087, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200160298 A2-A3 20010823 (WO 0160298)

Application: WO 2001US4616 20010214 (PCT/WO US0104616)

Priority Application: US 2000504765 20000215; US 2000504485 20000215

Designated States: AE AG AL AM AT AT (utility model) AU AZ BA BB BG BR BY  
BZ CA CH CN CR CU CZ CZ (utility model) DE DE (utility model) DK DK  
(utility model) DM DZ EE EE (utility model) ES FI FI (utility model) GB

GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA  
MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SK (utility model)  
SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 9189

English Abstract

An absorbent article which includes a phase change material capable of adding or removing heat to or from at least a portion of the absorbent article to perform a useful function on the article. The **phase change material may be activated by** an action of the wearer or caregiver or by **environmental conditions** between the article and wearer.

Main International Patent Class: **A61F-013/84**

Fulltext Availability: Detailed Description

Detailed Description

... impact breathability of the article. For example, if the article includes materials made from certain **shape memory** polymers, such as DiAPLEX (Mitsubishi International Corp.), breathability of portions made from that material may...  
...varied depending on the specific polymer formulation. Such materials are described in an article entitled, "**Water Vapor** Permeability of **Shape Memory** Polyurethane with Amorphous Reversible Phase" by Jeong, et. al in Journal of Polyme Science: Part...

**18/3,AB,K/8** (Item 5 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00793438

**REUSABLE DIAPER WITH AIR-FILLED OUTER EDGES**

**COUCHE POUR BEBE REUTILISABLE A BORDS EXTERIEURS GONFLABLES**

Patent Applicant/Inventor:

DEHLIN Mariana, Langelandsgatan 43, S-164 43 Kista, SE, SE (Residence),  
SE (Nationality)

Legal Representative:

BJELKSTAM Peter (et al) (agent), Bergenstrahle & Lindvall AB, P.O. Box  
17704, S-118 93 Stockholm, SE,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200126594 A1 20010419 (WO 0126594)

Application: WO 2000SE2000 20001016 (PCT/WO SE0002000)

Priority Application: SE 993713 19991015

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ

DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ  
LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG  
SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: Swedish

Fulltext Word Count: 1418

English Abstract

The invention relates to a refill diaper (1) consisting of two parts, namely an outer diaper (2) and an inner diaper (3). The outer diaper (2) does easily adapt its form to the form of the space between the legs of a child so that it assumes the same shape. It does include a continuous outer edge portion (4) which will contact the skin of the child and is air-filled to provide a sealed contact with the skin and a distance from motions in the diaper. The outer diaper prevents liquid from oozing out and it does include valves (9) permitting the diaper to respire and in that way to let out moisture. The inner diaper (3) is constituted by a conveniently exchangeable expandable diaper, the shape of which matches that of the outer diaper (2).

Main International Patent Class: **A61F-013/505**

International Patent Class: **A61F-013/494**

Fulltext Availability: Claims

Claim

... an outer diaper (2) and an inner diaper (3), the outer diaper (2) being easily **deformable** to the **shape** of the space between the legs of a child so as sealingly to match said...

...from oozing out and comprising valves (9) permitting the diaper (1) to respire letting out **lmoisture**, the inner diaper (3) being constituted by a conveniently exchangeable, expandable diaper the shape of...

**18/3,AB,K/9** (Item 6 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00756366

**PROCESS FOR COMPRESSING A WEB WHICH CONTAINS SUPERABSORBENT MATERIAL  
PROCEDE POUR COMPRIMER UNE BANDE CONTENANT UN MATERIAU SUPERABSORBANT**

Patent Applicant/Assignee:

KIMBERLY-CLARK WORLDWIDE INC, 401 N. Lake Street, Neenah, WI 54956, US,  
US (Residence), US (Nationality)

Inventor(s):

MELIUS Shannon Kathleen, 3118 Blueridge Drive, Appleton, WI 54914, US  
FELL David Arthur, 2055 Lynn Drive, Neenah, WI 54956, US  
REEVES William Grover, 616 East Greenfield Street, Appleton, WI 54911, US  
SANDERS Donald Joseph, 8348 Pine Cone Circle, Larsen, WI 54947, US  
VAN WYCHEN Heath David, 320 South John Street, Kimberly, WI 54136, US  
VENTURINO Michael Barth, 2124 Omega Drive, Appleton, WI 54915, US...  
WALLAJAPET Palani Raj Ramaswami, 9605 West Hampton Avenue, Apt. 108,  
Wauwatosa, WI 53225, US

Legal Representative:

YEE Paul Y, Kimberly-Clark Worldwide, Inc., 401 N. Lake St., Neenah, WI  
54956, US

Patent and Priority Information (Country, Number, Date):

Patent: WO 200069383 A1 20001123 (WO 0069383)

Application: WO 2000US13280 20000515 (PCT/WO US0013280)

Priority Application: US 99134361 19990514; US 99334186 19990616

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE  
DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK  
SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English  
Fulltext Word Count: 18205  
English Abstract

A process and apparatus for compacting a web (12) which contains a superabsorbent material (32) can include a plasticizing of the superabsorbent material contained in the web (12), and a compressing of the web (12) at a relatively low pressure. The selected, low pressure can be arranged to substantially avoid an excessive fracturing of the superabsorbent material.

Main International Patent Class: **A61F-013/15**

Fulltext Availability: Detailed Description

Detailed Description

... samples of superabsorbent material have been subjected to different conditions of compressing pressure, temperature and **moisture** content; Fig. 6 ...top view of a quantity of relatively dry superabsorbent material conditioned at approximately 50% relative **humidity** prior to is compressing;

Fig. 7A representatively shows a magnified top view of the superabsorbent...

...of a quantity of relatively dry superabsorbent material prior to conditioning at approximately 80% relative **humidity** and 1 00017;

Fig. 8A representatively shows magnified a top view of a quantity of relatively dry 2 5 superabsorbent material after conditioning at approximately 80% relative **humidity** and 1 000F and prior to compressing under a low force;

Fig. 8B representatively shows...

...compressing pressure has been released, wherein the compressed superabsorbent material has further recovered from its **deformed shape** and is substantially unfractured...

...photomicrograph which representatively shows a cross-sectional view of a composite composed of relatively high- **moisture** -content superabsorbent particles in a 2 5 fiber matrix, as observed after the composite as...superabsorbent material may become flattened, tend to form platelets or otherwise tend to retain a **deformed shape** when compressed. In additional aspects, the deformed superabsorbent particles can be configured to 3 0...

18/3,AB,K/10 (Item 7 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00547128

ABSORBENT ARTICLE WITH INCREASED WET BREATHABILITY

ARTICLE ABSORBANT POSSEDANT UNE PERMEABILITE ACCRUE A L'HUMIDITE

Patent Applicant/Assignee:

KIMBERLY-CLARK WORLDWIDE INC,

Inventor(s):

KEUHN Charles Paul Jr,  
EDENS Ronald Lee,  
ELLIKER Peter Robert,  
FAULKS Michael John,  
HU Sheng-Hsin,  
MCDOWALL Debra Jean,  
MELIUS Shannon Kathleen,  
MOCADLO Cheryl Ann,  
PHILLIPS Cynthia Marie,  
UTTECHT Cathleen Mae,  
WALLAJAPET Palani Raj Ramaswami,  
YAVICH Dmitry,

ZENKER David Louis,  
AKIN Frank Jerrel,  
LATIMER Margaret Gwyn,  
MAYBERRY Pamela Jean,  
PAUL Susan Carol,  
WRIGHT Audra Stefanik,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200010501 A1 20000302 (WO 0010501)  
Application: WO 99US19572 19990825 (PCT/WO US9919572)  
Priority Application: US 98139820 19980825; US 9897810 19980825; US  
98139824 19980825; US 99328681 19990609; US 99379289 19990823

Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK  
DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR  
LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM  
TR TT UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ  
MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ  
CF CG CI CM GA GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 28862

English Abstract

An absorbent article includes a **vapor** permeable backsheet, a liquid permeable topsheet positioned in facing relation with the backsheet; and an absorbent body located between the backsheet and the topsheet. The absorbent body may include multiple zones of high air permeability or may include materials which provide improved air exchange after being wetted. The absorbent article may also include a ventilation layer between the absorbent body and the backsheet and a surge management layer between the absorbent body and the topsheet. The article exhibits improved air exchange within the article during use. As a result, the article exhibits substantially reduced levels of hydration of the wearer's skin when in use which renders the skin less susceptible to the viability of microorganisms.

Main International Patent Class: **A61F-013/15**

Fulltext Availability: Detailed Description

Detailed Description

... It is believed that the contraction of the above materials occurs due to the **change** in **shape** of the fibrous absorbent materials. Initially, these absorbents are a long cylindrical (fiber) shape, upon exposure to **moisture vapor** these fibrous materials contract into a globular shapes which cause the system to contract...

20/3,AB,K/5 (Item 5 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00387322

**WRAPPED TEXTILE PRODUCT, METHOD OF PACKING TEXTILE PRODUCT UP, AND METHOD OF RESTORING ORIGINAL FORM OF TEXTILE PRODUCT**

**ARTICLE TEXTILE EMBALLE, PROCEDES D'EMBALLAGE ET DE RESTITUTION DE SA FORME INITIALE A L'ARTICLE**

Patent Applicant/Assignee:

BONNIE CO LTD,  
NAKANO Yusuke,  
OISHI Nobuo,  
NISHIMURA Naotaka,

Inventor(s):

NAKANO Yusuke,

OISHI Nobuo,  
NISHIMURA Naotaka,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9728065 A1 19970807

Application: WO 97JP183 19970128 (PCT/WO JP9700183)

Priority Application: JP 9613782 19960130

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CU CZ DE DK EE ES FI  
GB GE HU IL IS JP KE KG KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO  
NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN KE LS MW SD SZ  
UG AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC  
NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG

Publication Language: Japanese

English Abstract

A method comprises drying a hydrophilic textile product at high temperature for a short period of time, packing it with a **moistureproof** film in a dry atmosphere, unpacking it after transportation and storage, and leaving it in normal conditions, i.e., at 25 degreesC and 55 to 80 % RH, to restore its original form. A method comprises exposing a hydrophobic textile product to a high temperature of 70 to 90 degreesC to impart **shape memory** to fiber using thermal hysteresis, packing it with a **moistureproof** film, unpacking it after transportation and storage, and exposing it to a high temperature of 70 to 90 degreesC to restore its original form. According to the method, it is possible to prevent wrinkles and deformation of textile products such as wrapped clothing, bedding and the like, keep a low **moisture** content and readily restore the original form of a textile product after it is unwrapped.

(FILE 'HOME' ENTERED AT 15:19:27 ON 26 NOV 2003)  
FILE 'HCAPLUS, MEDLINE, EMBASE, BIOSIS, EMA, MATEBUS, BABS, CIN, RUSSCI,  
CONFSCI' ENTERED AT 15:19:52 ON 26 NOV 2003

L1 11789 S SHAPE MEMORY  
L2 36549 S SHAPE(2A) (DEFORM? OR CHANG?)  
L3 406481 S HUMID? OR MOIST-OR-MOISTURE  
L4 3666878 S RESPOND? OR RESPONSIVE OR ACTUAT? OR ACTIVAT?  
L5 65950 S WATER VAPOR OR WATER VAPOUR  
L6 47515 S L1 OR L2  
L7 1671 S L4(3A) (L3 OR L5)  
L8 5 S L6 AND L7  
L9 221 S L6 AND (L3 OR L5)  
L10 66 S L6 (20A) (L3 OR L5)  
L11 52 S L6(10A) (L3 OR L5)  
L12 48 DUPLICATE REMOVE L11 (4 DUPLICATES REMOVED)  
FILE 'CEN, PLASNEWS' ENTERED AT 15:30:09 ON 26 NOV 2003  
L13 0 S L6 AND L7  
L14 57 S L6  
L15 2 S L7  
L16 0 S L10

L8 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2003:242043 HCAPLUS  
DN 138:260542

TI Disposable products having \*\*\*humidity\*\*\* - \*\*\*activated\*\*\*  
polymeric materials with \*\*\*shape\*\*\* \*\*\*memory\*\*\*

IN Topolkaraev, Vasily A.; Soerens, Dave A.

PA USA

SO U.S. Pat. Appl. Publ., 15 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM A61F013-15

ICS A61F013-20

NCL 604385290; 604385260; 604367000; 604368000; 604369000; 604372000

CC 63-7 (Pharmaceuticals)

Section cross-reference(s): 38, 39

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003060793	A1	20030327	US 2001-911813	20010724
PRAI	US 2001-911813		20010724		

AB The present invention relates to \*\*\*shape\*\*\* \*\*\*deformable\*\*\*  
materials, which are capable of (1) being deformed, (2) storing an amt. of  
\*\*\*shape\*\*\* \*\*\*deformation\*\*\*, and (3) recovering at least a portion  
of the \*\*\*shape\*\*\* \*\*\*deformation\*\*\* when exposed to a humid  
environment. The \*\*\*shape\*\*\* \*\*\*deformable\*\*\* materials can  
advantageously be in the form of films, fibers, filaments, strands,  
nonwovens, and pre-molded elements. The \*\*\*shape\*\*\*  
\*\*\*deformable\*\*\* materials of the present invention may be used to form  
products, which are both disposable and reusable. More specifically, the  
\*\*\*shape\*\*\* \*\*\*deformable\*\*\* materials of the present invention may  
be used to produce products such as disposable diapers, training pants,  
incontinence products, and feminine care products. For example, a  
microlayer film of alternating layers of polyurethane Morthane PS370-200  
and PEO resin was produced using a microlayer coextrusion line. The  
rectangular strips of multilayer PS370-200/PEO (70:30) film were stretched

to six times at 25.degree.. The resulting latent deformation was about 150% in film length. The stretched film sample was placed in an environmental oven at 37.degree. and 95% relative humidity. After 20 min in the environmental oven, the sample was removed and the dimensions of the film were measured. The dimensional change of the film in machine direction was 46% as compared to the stretched-film length.

ST polymer rubber humidity \*\*\*shape\*\*\* \*\*\*memory\*\*\* disposable absorbent article

L8 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 2000:832154 HCAPLUS

DN 134:72275

TI Water vapor permeability of \*\*\*shape\*\*\* \*\*\*memory\*\*\* polyurethane with amorphous reversible phase

AU Jeong, Han Mo; Ahn, Byoung Kun; Cho, Seong Mo; Kim, Byung Kyu

CS Department of Chemistry, Research Center for Machine Parts and Materials Processing, University of Ulsan, Ulsan, 680-749, S. Korea

SO Journal of Polymer Science, Part B: Polymer Physics (2000), 38(23), 3009-3017

CODEN: JPBPEM; ISSN: 0887-6266

PB John Wiley & Sons, Inc.

DT Journal

LA English

CC 37-5 (Plastics Manufacture and Processing)

Section cross-reference(s): 35, 36

AB \*\*\*Shape\*\*\* \*\*\*memory\*\*\* thermoplastic polyurethanes (TPUs), based on amorphous soft segment from the reaction of hexamethylene diisocyanate and 1,2-butane diol, and the cryst. hard segment from 4,4'-methylenediphenyl diisocyanate and 1,6-hexanediol, were modified by hydrophilic segments, diol-terminated poly(ethylene oxide) or dimethylol propionic acid (DMPA). Differential scanning calorimetry, dynamic mech. testing, tensile testing, and the measurement of \*\*\*shape\*\*\* \*\*\*memory\*\*\* effect, water swell, and water vapor permeability were carried out to examine these TPUs. The hydrophilic segment increased the hysteresis in \*\*\*shape\*\*\* \*\*\*memory\*\*\* effect by reducing the crystallinity of the hard segment. The neutralized DMPA unit enhanced the sensitivity of the thermo \*\*\*responsive\*\*\* \*\*\*water\*\*\* \*\*\*vapor\*\*\* permeability (WVP) by amplifying the increase of WVP at the temp. range above the glass transition temp.

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L12 ANSWER 5 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:299044 HCAPLUS  
DN 138:322746  
TI **Moisture absorbing and releasing particles with good shape stability and coatings/moldings therewith**

L12 ANSWER 11 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2002:965752 HCAPLUS  
DN 138:354632  
TI **Temperature dependency of \*\*\*water\*\*\* \*\*\*vapor\*\*\* permeability of \*\*\*shape\*\*\* \*\*\*memory\*\*\* polyurethane**

L12 ANSWER 12 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2002:796895 HCAPLUS  
DN 138:222454  
TI **Functional \*\*\*water\*\*\* \*\*\*vapor\*\*\* permeability of solution-cast \*\*\*shape\*\*\* \*\*\*memory\*\*\* polyurethane membrane**

L12 ANSWER 13 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2000:832154 HCAPLUS  
DN 134:72275  
TI **\*\*\*Water\*\*\* \*\*\*vapor\*\*\* permeability of \*\*\*shape\*\*\* \*\*\*memory\*\*\* polyurethane with amorphous reversible phase**

L12 ANSWER 14 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 1  
AN 2000:901699 HCAPLUS  
DN 134:179501  
TI **Temperature sensitive \*\*\*water\*\*\* \*\*\*vapor\*\*\* permeability and \*\*\*shape\*\*\* \*\*\*memory\*\*\* effect of polyurethane with crystalline reversible phase and hydrophilic segments**

L12 ANSWER 15 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2000:447454 HCAPLUS  
DN 133:164662  
TI **Electrochemical sensors for nondestructive evaluation of adhesive bonds**

L12 ANSWER 16 OF 48 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
AN 2000:188973 BIOSIS  
TI **The effects of different freeze-drying processes on the moisture content, color, and physical strength of roses and carnations.**

L12 ANSWER 39 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1978:143766 HCAPLUS  
DN 88:143766  
TI **\*\*\*Change\*\*\* in the \*\*\*shape\*\*\* of the spectral lines of \*\*\*water\*\*\* \*\*\*vapor\*\*\* broadened by foreign gases**

L12 ANSWER 46 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1967:56460 HCAPLUS  
DN 66:56460  
TI **Viscoelastic properties of oriented nylon 66 fibers**

L12 ANSWER 48 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1952:22008 HCAPLUS  
DN 46:22008  
OREF 46:3761b-d  
TI **Some factors affecting the stress-strain characteristics of paper. II. Influence of relative humidity**

L12 ANSWER 7 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2003:237668 HCAPLUS

DOCUMENT NUMBER: 139:53876

**TITLE:** Influence of processing conditions on the microstructure and properties of shape memory polyurethane membranes

**AUTHOR(S):** Hu, J. L.; Zeng, Y. M.; Yan, H. J.

**CORPORATE SOURCE:** Institute of Textiles and Clothing, The Hong Kong Polytechnic University, Hong Kong, Peop. Rep. China

**SOURCE:** Textile Research Journal (2003), 73(2), 172-178

CODEN: TRJOA9; ISSN: 0040-5175

**PUBLISHER:** Textile Research Institute

**DOCUMENT TYPE:** Journal

**LANGUAGE:** English

**AB** Soln.-cast films of shape memory polyurethane are investigated by Fourier transform IR spectroscopy, differential scanning calorimetry, dynamic mech. anal., tensile properties, \*\*\*water\*\*\* \*\*\*vapor\*\*\* permeability, and \*\*\*shape\*\*\* \*\*\*memory\*\*\* effect tests. Samples cast at higher temps. contain more hard segments in the cryst. state and better water vapor permeability than samples cast at lower temps. The change in \*\*\*water\*\*\* \*\*\*vapor\*\*\* permeability of \*\*\*shape\*\*\* \*\*\*memory\*\*\* polyurethane films with respect to temp. follows an S-shaped curve, and increases abruptly at Ts, the shape memory temp. of the soft segment. The higher the modulus ratio at two specified temps. before and after Ts, the better the shape memory behavior of shape memory polyurethane.

**REFERENCE COUNT:** 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 17 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2001:164883 HCAPLUS

DOCUMENT NUMBER: 135:168121

**TITLE:** Applications of polyurethane-based shape-memory polymer for paper and nonwovens

**AUTHOR(S):** Morikawa, Masaaki; Takahashi, Masaki

**CORPORATE SOURCE:** Industrial Research Institutes of Ehime Prefecture, Japan

**SOURCE:** Ehime-ken Kogyokei Shiken Kenkyu Kikan Kenkyu Hokoku (2000), 38, 95-97

CODEN: EKSKBX

**PUBLISHER:** Ehime-ken Kogyo Gijutsu Senta

**DOCUMENT TYPE:** Journal

**LANGUAGE:** Japanese

**AB** Filter paper, rayon fiber paper, and melt blown nonwovens of polypropylene were satd. with polyurethanes in DMF. The impregnated paper had high water vapor permeability, which rised markedly with increasing temp.

L12 ANSWER 19 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1999:267210 HCAPLUS

DOCUMENT NUMBER: 130:339606

**TITLE:** Shape-memory paper and sheets

**INVENTOR(S):** Ishiguro, Hideyuki; Miyazaki, Kazuya; Amikura, Kazuhiro

**PATENT ASSIGNEE(S):** Toyo Ink Mfg. Co., Ltd., Japan

**SOURCE:** Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11115137	A2	19990427	JP 1997-278321	19971013
PRIORITY APPLN. INFO.:			JP 1997-278321	19971013

AB Title paper and sheets, are useful for securities, ballots, prepaid cards, etc., are obtained by coating or laminating paper or polymer sheets with cryst. urethane prepolymers on one or both sides and then moisture-curing the prepolymers. The paper and sheets return to the initial shapes without wrinkles by heat treatment after crumpled. Preferably, the prepolymers are obtained by reacting cryst. polyester-polyols with polyfunctional isocyanates and have NCO terminal groups. Thus, 100 parts a cryst. polyester diol (from succinic acid and 1,8-octanediol) was polymd. with 65 parts MDI to obtain an urethane prepolymer, which was applied on paper at 85 g/m<sup>2</sup> and cured at 65% \*\*\*humidity\*\*\* and 20.degree. for 24 h to give \*\*\*shape\*\*\* - \*\*\*memory\*\*\* paper. The paper was crumpled to form wrinkles and heated at 120.degree. for 3 min in an oven to return to the initial shape without wrinkles.

L12 ANSWER 25 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1998:109840 HCAPLUS

DOCUMENT NUMBER: 128:141610

TITLE: **Properties and applications of polyurethane-based shape memory polymer**

AUTHOR(S): Hayashi, S.

CORPORATE SOURCE: Nagoya Research and Development Center, Mitsubishi Heavy Industries, Ltd., Nagoya, 453, Japan

SOURCE: US-Japan Workshop on Smart Materials and Structures, Proceedings, 1st, Seattle, Dec. 3-4, 1995 (1996), Meeting Date 1995, 29-38. Editor(s): Inoue, Kanryu; Shen, Steve I. Y.; Taya, Minoru. Minerals, Metals & Materials Society: Warrendale, Pa.

CODEN: 65QVAG

DOCUMENT TYPE: Conference

LANGUAGE: English

AB The properties and uses of polyurethane-based shape memory polymers are discussed. The polyester-polyurethanes and polyether-polyurethanes have a glass transition temp., T<sub>g</sub>, in the room temp. range and an elastic modulus that changes largely at temps. below and above T<sub>g</sub>. The shape memory material can fix its deformation by cooling below T<sub>g</sub>, and recovers the original shape by heating above T<sub>g</sub>. In addn., it has specific properties, such as gas permeability and damping property. Three products developed with the polyurethanes include an injection-moldable thermoplastic, a soln. suitable for coating, and a prepolymer for potting compds. consisting of two components.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 27 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1995:599266 HCAPLUS

DOCUMENT NUMBER: 123:200192

TITLE: **Properties and applications of polyurethane-series shape memory polymer**

AUTHOR(S): Hayashi, S.; Kondo, S.; Giordano, C.

CORPORATE SOURCE: Mitsubishi Heavy Industries, Ltd., Japan  
 SOURCE: Annual Technical Conference - Society of Plastics Engineers (1994), 52nd(Vol. 2), 1998-2001  
 CODEN: ACPED4; ISSN: 0272-5223  
 PUBLISHER: Society of Plastics Engineers  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English

AB A review with 5 refs. covers the development of a polyurethane-series shape memory polymer having max. mech. property changes in the range of room temp. including: the \*\*\*shape\*\*\* \*\*\*memory\*\*\* effect, \*\*\*moisture\*\*\* permeability, thermal expansion function, damping function, optical function, types of materials, and applications.

L12 ANSWER 30 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1993:672353 HCAPLUS  
 DOCUMENT NUMBER: 119:272353  
**TITLE:** **Shape memory resins**  
 AUTHOR(S): Harada, Eisuke  
 CORPORATE SOURCE: Nikkan Kogyo Shinbunsha, Japan  
 SOURCE: Kogyo Zairyo (1993), 41(2), 111-15  
 CODEN: KZAIAS; ISSN: 0452-2834

DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese

AB The principles of \*\*\*shape\*\*\* \*\*\*memory\*\*\* effect of resins, in general, and automatic control of \*\*\*moisture\*\*\* amt. of sportswear by using polymers with proper glass temp., in particular, are discussed.

L12 ANSWER 32 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1991:476238 HCAPLUS  
 DOCUMENT NUMBER: 115:76238  
**TITLE:** **Iron base shape memory alloys**  
 INVENTOR(S): Otsuka, Hiroaki; Yamada, Hiroyuki; Maruyama, Tadakatsu; Tanahashi, Hiroyuki  
 PATENT ASSIGNEE(S): Nippon Steel Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02228451	A2	19900911	JP 1989-47689	19890228
PRIORITY APPLN. INFO.:			JP 1989-47689	19890228

AB The alloys contain Mn 5-15, N 0.02-0.5, Cr 1-20, Ni 1-10, Si 1-10, and optionally Co 1-10, Al 1-10, Ge and Nb 0.005-0.5 each, Ti and V 0.05-1 each, B 0.005-0.5, and rare earth metal 0.005-0.5%. The alloys have high \*\*\*shape\*\*\* \*\*\*memory\*\*\* effect and corrosion resistance and can be used in a \*\*\*moisture\*\*\* -contg. atm. without protective coating.

L12 ANSWER 36 OF 48 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1988:57748 HCAPLUS  
 DOCUMENT NUMBER: 108:57748  
**TITLE:** **Deformation of synthetic fibers in a sorptive medium. III. Deformation of polyamide fibers in relation to fiber shape**

AUTHOR(S): Grebennikov, S.; Aleksandrov, S.; Lazarova, R.; Kinin,

CORPORATE SOURCE: A.  
Inst. Tekst. Leka Prom., Bulg.  
SOURCE: Khimiya i Industriya (1922-1988) (1987), 59(1), 29  
CODEN: KINSAF; ISSN: 0368-5764  
DOCUMENT TYPE: Journal  
LANGUAGE: Bulgarian

AB The deformation of polyamide fibers with different cross-sectional profiles (triangular, trilobe, four-lobe, and H-shaped) was studied as a function of air humidity. At low air humidity, the amt. of sorbed **water vapor** was equal for all fibers. At high relative humidity (95-99%), the amt. of sorbed water depended on the fiber perimeter. Elastic deformation was significantly affected by the cross-sectional shape of the fiber. The highest increase in **elastic deformation with increasing relative humidity** was obsd. for trilobe-shaped fibers.